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Inside Dope

By George F. Taubeneck

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Odd Man Loses

More Anecdotes

Herewith we present the second and final installment of jokes-we-had-intended-to-tell-to-industry-audiences during 1945. (Can't do it in person, because of "circumstances beyond our control.")

Hope you like these:

So Say We All

Here's one told by the famous Supreme Court Justice, Oliver Wendell Holmes, which will be treasured by every traveling salesman who has had his fitful sleep on Pullmans interrupted with that interminable shuffling and shambling of cars at railroad assembly-and-distribution points.

Holmes had undergone this customary ordeal for two nights running, and finally gave up. He left the transcontinental train at Gary, and took a room in the nearest hotel for the night.

This was a mistake.

The hotel was situated alongside the switching tracks.

After enduring five hours of locomotive noises—huffing and puffing, pulling and hauling, chugging against squealing locked brake-bands—all of which heavy movements shook the flimsy framework of the hotel, Holmes finally arose, dressed, and went down to the lobby.

"What time," he inquired of the desk clerk, "does this hotel reach Chicago?"

Who Dat?

At Grand Central Station in New York, a pompous executive boarded a through train to Chicago.

"Now see here, porter," said he briskly, "I want you to put me off at Syracuse. You know we get in there about 6 o'clock in the morning, and I may oversleep myself. But it is important that I should get off.

"Here's a five-dollar bill. Now I may wake up hard, for I have been drinking tonight and will probably feel rocky. Don't mind if I kick. Pay no attention if I'm ugly. I want you to put me off at Syracuse."

"Yes sah," answered the sturdy Nubian, ramming the bill into his trousers pocket. "It shall be did, sah!"

Next morning the executive was awakened by a stentorian voice calling: "Rochester! Thirty minutes for refreshments!"

"Rochester!" he exclaimed, sitting up. "Where is that name-of-a-name porter?"

Hastily slipping on his trousers, he went in search of the object of his wrath, and found him in the porter's closet, huddled up with his head in a bandage, his clothes torn, and his arm in a sling.

"Well," ejaculated the executive, "you are certainly a sight. Been in an accident? Why didn't you put me off at Syracuse?"

"What-at!" ejaculated the porter, jumping to his feet, as his eyes bulged from his head. "Was you de gemman what guf ter me a five-dollar bill?"

"Of course I was, you blithering idiot!"

"Well, den, befoah de Lawd, who was dat gemman I wrestled off at Syracuse?"

(Concluded on Page 23)

All Dealers Get Bendix Washers To Start Sales

SOUTH BEND, Ind.—With a postwar model on display at each of its some 8,000 dealerships and with limited deliveries expected within a month, Bendix Home Appliances, Inc., launched its automatic washer sales campaign Sept. 16 with nationwide advertising in Sunday newspapers.

Shortages of materials will hold production down until Jan. 1, the company believes, but after that quantity production should be started. Bendix expects to produce some 600,000 washers a year to meet a potential market of 1,000,000 sales during the next two years, it was indicated.

Said to be changed considerably from the previous model, the new

(Concluded on Page 4, Column 3)

Distributors Hear Frigidaire Plans

DAYTON, Ohio — Reconversion planning of Frigidaire Division, General Motors Corp., reached another step with the holding of a three-day "Reconversion-to-Sales" conference with a nationwide representation of branch managers and distributors, accompanied by their sales managers. The meetings ran Sept. 12 through Sept. 14.

The first postwar sales conference included a showing of the new Frigidaire products, sales campaigns to be utilized in presenting the Frigidaire appliances to the public after a wartime dearth of almost four years, and the organizations plans for future manufacturing.

The distributors were further enlightened as to the availability of refrigerators, electric ranges, and

(Concluded on Page 4, Column 5)

Monitor Introduces Line At Distributor Meetings

NEW YORK CITY—Monitor Equipment Corp., which has just revealed its line of products in private showings to distributors, has also made public the following information about its products.

Refrigerator models will have modern styling and mechanism, and will generally have conventional interior arrangement, with standard-type evaporator.

Home freezers will include 6, 12, and 20-cu. ft. models, and will have a special design feature.

Laundry equipment will include a small clothes washer that has what

(Concluded on Page 29, Column 2)

Sterling Smith Resigns As Mills Manager

CHICAGO—Sterling Smith has announced his resignation as manager of the refrigeration division of Mills Industries, Inc.

Well known in both commercial and industrial refrigeration for the past 20 years, for the moment he has indicated no future plans. But he will continue in the industry, he has said, after a brief vacation ending early in October.

Before his association with Mills, which began a year ago, Mr. Smith for three years was chief of the refrigeration and air conditioning sections of the War Production Board, and before that served with Nash-Kelvinator.

Mr. Smith's successor at Mills will be announced at an early date, according to G. B. Mills, vice president of the company.

NEWA Adopts EEI Plan on Sales Training

NEW YORK CITY—By coordinating its efforts with the Edison Electric Institute, the National Electrical Wholesalers Association is completing a basic sales training program to be made available to all its members, announced Charles G. Pyle, managing director.

Fundamental principles of selling, without regard to any particular product or service, is the foundation upon which this basic sales training course has been constructed, it was announced.

Experts in the sales training field are compiling the material, the cost of which will be nominal and well within the means of every electrical wholesaler, Mr. Pyle said.

Training material will include a number of sound slide films and records, as well as silent trailer-films, salesmens' manuals, and leaders' guides.

The needs of sales organizations of electric utilities, electrical manufacturers, wholesalers, and dealers are embraced in the course as it is being designed, said Mr. Pyle.

Discussions in several meetings of

(Concluded on Page 4, Column 4)

OPA Ruling May Aid Some Manufacturers

WASHINGTON, D. C. — Explanation of the recently announced supplementary pricing rules intended to give relief to individual manufacturers who can prove they face production at a loss under present ceiling prices has been made by OPA officials.

The new provision will not permit any adjustment that could be made under the Supplementary Orders 118 and 119, which were issued July 23, according to the latest OPA announcement.

Commodities covered by the new provisions are those which did not have adequate provision for price

(Concluded on Page 29, Column 3)

ASHVE Groups to Meet In Cleveland Oct. 6-8

CLEVELAND—Program of activities scheduled for members of the American Society of Heating & Ventilating Engineers Oct. 6-8, include meetings of the council, committee on research, and the Northern Ohio Chapter here.

Prof. G. L. Tuve, chairman of the committee on research, has announced a meeting of the committee at the A.S.H.V.E. laboratory on Oct.

(Concluded on Page 29, Column 2)

Hotpoint Producing Deluxe, Standard 7-Cu. Ft. Models

CHICAGO—Hotpoint's first refrigerators since 1942 are scheduled to come off the assembly line at the Erie, Pa. plant, Sept. 24. The first production is comprised of two types, a deluxe and a standard model, each of 7-cu. ft. capacity.

Those produced immediately will be shipped to government stockpile, Floyd M. Slasor, manager, refrigeration sales division, Edison General Electric Appliance Co., said.

Asserting that Hotpoint refrigeration production would be greater during 1946 than at any previous time in the company's history, Mr. Slasor cited 1941 as the company's record year when production was "actually over-sold."

Refrigeration production brings the

(Concluded on Page 29, Column 2)

Brunner Cites Trend To Larger Machines

UTICA, N. Y. — Shipments and billings of the Brunner Mfg. Co. in August were the greatest of any month in its history, George L. Brunner, president, has reported.

While the present backlog of orders is such that it would keep the present plant facilities operating at capacity for some time, Mr. Brunner declared that with new production equipment already purchased the firm will be "receptive to new business very soon."

Mr. Brunner pointed out that there

(Concluded on Page 29, Column 1)

Firestone Dealers Get Full Appliance Line

AKRON, Ohio—A full line of electrical appliances and radios will be marketed by Firestone Tire & Rubber Co. through its Firestone dealer stores and Firestone dealers, announced H. D. Tompkins, vice president, in a talk on the company's regular radio network broadcast recently.

Lower priced models than were

(Concluded on Page 4, Column 3)

Homeowners In Rush To Convert To Oil Heat

DETROIT—The rush to convert to oil heating systems from coal-burning systems is so great that some sections of the country are reporting a "black market" in equipment for such purposes.

The trend to oil heating has been

(Concluded on Page 29, Column 1)

MEETINGS FOR THE INDUSTRY

Editor's Note: The NEWS, in succeeding regular issues, will catalog scheduled meetings that are more than local in interest. The calendar will include events coming up during the rest of the current month and for the three months immediately ahead.

National, regional, and statewide groups planning refrigeration, air conditioning, or major appliance meetings or events are invited to keep us posted.

Sept. 28, Fri.: Special ASRE meeting to vote on charter amendment. 40 East 40th, New York City.

Sept. 28-29, Fri.-Sat.: Regional Group 5 (covering the North Central states) of the NRSJA. The Statler, Cleveland.

Oct. 1-31: Postwar appliance show sponsored by the Electrical Association of Chicago. Commonwealth Edison Bldg., Chicago.

Oct. 6-8, Sat.-Mon.: ASHVE meetings of the council, committee on research, and Northern Ohio chapter. ASHVE laboratory and the Statler, Cleveland.

Oct. 20-21, Sat.-Sun.: Illinois State Association RSES, annual business and educational meeting. Hotel Rogers, Bloomington.

Nov. 7-9, Wed.-Fri.: Fall REMA meeting, open session last two days. The Homestead, Hot Springs, Va.

2,500 Plants a Year Predicted For Locker Field

Problems Discussed at Chicago; Plans For Show May Change

By Phil B. Redeker

CHICAGO — The Frozen Food Manufacturers and Suppliers Association, meeting here last week, discussed three major issues of importance to the frozen food locker plant field, and set wheels in motion for future action on these issues, which are:

1. Construction and performance standards. Debate at the meeting showed that there is still a wide divergence of opinion as to what the standards should be, so committees will be appointed to formulate suggested standards for refrigeration and insulation performance.

2. A locker plant and frozen food industry show. Final decision on this will probably be made by directors of the association, after conferences with other groups. There is a possibility that this show might be tied in with the All-Industry Refrigeration Exhibition, sponsored by Refrigeration Equipment Manufacturers Association, which will be held the last week in October, 1946.

3. Program for training locker plant operators. Steps are being taken to establish an 11-weeks' "short course" in locker plant operating technique, to be given by the Ohio State university's college of agriculture at Columbus. One of the main reasons for such a course is to give returned war veterans an opportunity to get into locker plant work, but the course will not be restricted to veterans.

Concerning the locker plant and frozen food industry show, some tentative plans had been made prior to the Chicago meeting to book such a show into the Kansas City Auditorium sometime next spring.

However, representatives of both the Locker Manufacturers and Suppliers' group, and the National Frozen Food Locker Association, expressed doubts that enough hotel room space could be guaranteed in Kansas City to handle the size crowd that might be in attendance at such a show.

Moreover, there was an expression on the part of some manufacturers present that they might not have new products ready to display for a spring meeting.

At the request of the chairman of the meeting, two representatives of the Refrigeration Equipment Manufacturers Association—F. J. Hood, president, and R. K. Hanson, executive secretary—described plans for the All-Industry Refrigeration & Air Conditioning Exhibition, for which the dates of Oct. 26-31, 1946 have been set, this show to be held in the Cleveland Public Auditorium.

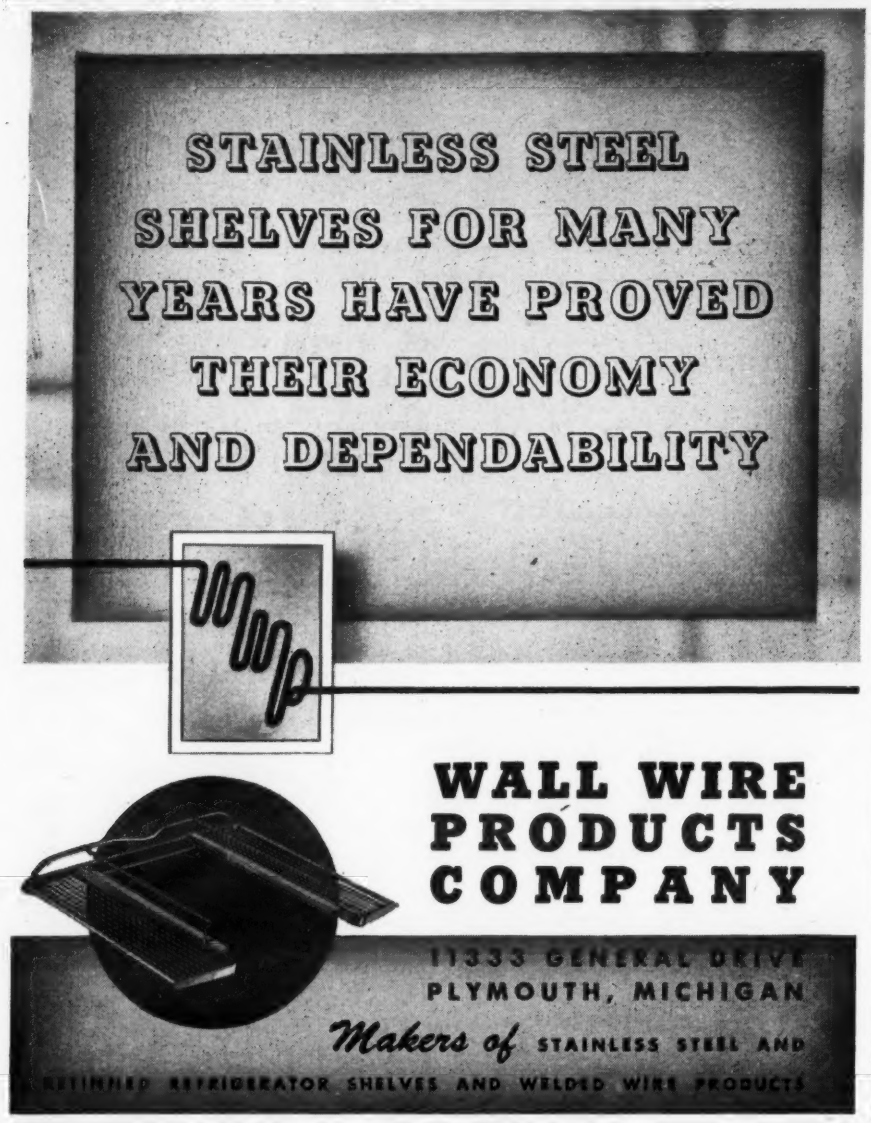
Rema has reserved 250,000 square feet of floor space for this Exhibi-

(Continued on Page 24, Column 2)

ASRE To Plan For Meeting in December

NEW YORK CITY—The American Society of Refrigerating Engineers will in all probability hold its annual meeting early in December in New York City, it has been indicated at the national A.S.R.E. headquarters.

The A.S.R.E. Council meeting here Sept. 28 will probably fix official dates and make program plans for the annual conclave.



'Original' Radio Tube Ceilings Increased 11%

WASHINGTON, D. C. — Ceiling prices for radio receiving tubes and parts sold for installation as original equipment in radio sets will be increased from 5 to 11%, it has been announced by Chester Bowles, OPA Administrator.

These higher prices will be made possible through increase factors that tube and parts manufacturers may use in computing their ceiling prices.

The increases will not apply to tubes and parts sold for repair purposes.

Mr. Bowles said that the reconversion pricing factors will permit radio tube and parts manufacturers to determine quickly new ceiling prices for postwar production, and will also enable manufacturers of complete prices to determine what their costs will be for sets returning to the market.

In calculating his ceiling price for a part, the parts manufacturer takes his Oct. 1-15, 1941 price for the part and multiples it by the increase factor.

Stanley Co. To Distribute In Oklahoma City

OKLAHOMA CITY, Okla. — Formation of the Stanley Co., a new distributor firm here, was announced by its founders, Fred S. Williams, formerly southwestern representative for Perfection Stove Co., and Warren L. Harris, district credit manager for the company in Kansas.

Commercial Credit Co. Reopens Offices for Appliance Buyers

NEW YORK CITY—Many offices of Commercial Credit Co. are being reopened to enable prospective purchasers of household appliances and automobiles to buy them without dipping into wartime savings or selling war bonds, according to H. L. Wynegar, president.

With its postwar program initiated immediately after the Japanese surrender, the company will continue to open offices as available personnel permits, he said, adding that many of the offices will be staffed by former employes whose return from the armed forces is "eagerly awaited."

Describing consumer credit as one of the nation's surest guarantees against inflation, Mr. Wynegar declared:

"Economic experts warned frequently during the war years that the huge financial reserve in the form of war bonds in former war workers' hands could touch off an inflationary explosion if these funds were dumped too rapidly in various markets. Consumer credit permits these purchases to be made from continuing current incomes.

"Our program extends also to wholesalers and retailers from whom consumers obtain automobiles and other products. Obviously, the willingness and desire on the part of consumers to purchase automobiles, trucks, and household appliances on time payments must be supplemented by large, readily available supplies in wholesalers' and retailers' hands. Consequently, our plans enable these wholesalers and retailers to function at top effectiveness with the aid of lower financing costs than ever before in financing history."

E. D. Wacker Is Manager Of C. J. Tagliabue

BROOKLYN—E. D. Wacker has been appointed general manager of the C. J. Tagliabue division of the Portable Products Corp., according to Fernal R. Marlier, president.

Mr. Wacker, who has been associated with this division for a period of 22 years, was general sales manager for the last eight years.

Deepfreeze Engineer

HARLEY W. WHITMORE
Has been appointed chief engineer for Deepfreeze Division, Motor Products Corp.

Easing of Credit Rules Urged by Furniture Men

CHICAGO—National Retail Furniture Association has submitted suggestions for relaxing restrictions on consumer credit.

The following proposals are embodied in the suggestions:

A reduction to 20% in the down payment for appliances and other consumer durable goods, for which a down payment of 33⅓% is now required under Regulation W.

Permitting of "add-on" purchases without down payment as long as the total credit does not exceed that of the original contract.

Exemption from down payment requirements any article, the cash value of which is $50 or less. The regulation now exempts articles of $10 or less.

Glacier A. C. Co. Formed

OROVILLE, Calif. — The Glacier Air Conditioning Co. is a new Colorado corporation in California, with a capital of $50,000. California agent is J. E. Long, located here.

features you'll want
in your
New Refrigerator
ALUMINUM FOOD TRAYS will make it easier to freeze meats, vegetables and fruits for storage.
CRUSHED ICE TRAY of Aluminum gives you cracked ice quickly.
ALUMINUM ICE CUBE TRAYS will speed quick freezing and simplify removal of ice cubes.
ALUMINUM SHELVES are stain-resistant, keep bright and sparkling just by wiping occasionally.
ALUMINUM WATER COOLER for abundant cold water.
FROZEN FOOD STORAGE BOXES of Aluminum make it simple to store quantities of frozen foods.
ALUMINUM STORAGE DISHES can be put on fire for heating and on the table for serving.
ALUMINUM STORAGE BINS keep fruits and vegetables crisp, flavorful—lightweight, easy to clean.

When new refrigerators are available you'll be expecting something wonderful. And you'll not be disappointed. For Alcoa Aluminum will be used in many of the new refrigerators for such features as shown here and others yet to come. When you see Alcoa Aluminum in your new refrigerator, you'll know it is designed to give you long, [illegible] service.

HELPING YOU SELL

Tomorrow's market

Right now, women are dreaming of the day when they can buy those new, postwar refrigerators and home appliances. They're expecting something exciting. And the manufacturers are not going to disappoint their customers.

Many of the "after-the-war" refrigerators and appliances will feature the use of Alcoa Aluminum. It will add new beauty, be lighter to handle and easier to clean. The use of aluminum will give you added selling features.

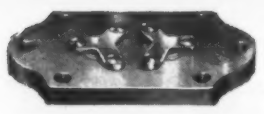
This Alcoa advertisement reaching millions of your best prospects will help you sell tomorrow's market. It is one of a series featuring some of the advantages of aluminum in refrigerators and home appliances.

ALUMINUM COMPANY OF AMERICA,
1975 Gulf Bldg., Pittsburgh 19, Pa.

THIS ADVERTISEMENT APPEARED IN THE MAY ISSUE OF BETTER HOMES & GARDENS.

ALCOA FIRST IN ALUMINUM

"ANOTHER NICE MONTH, JOE; WE SURE GET LESS GRIEF AND MORE GRAVY USING THOSE CHICAGO SEALS"



CHICAGO VALVE PLATES
Save time and work, too. Only refrigerator compressor valve plates with removable valve seats. Sizes for most compressors.

CHICAGO GENERAL REPLACEMENT SEALS
Go on refrigerator compressors in less time, with less work, and cut down "call backs."

MODERN DESIGN

SOLD BY JOBBERS

CHICAGO SEAL CO.
20 NORTH WACKER DRIVE • CHICAGO 6, ILL.

Typical page from "Design for Selling." In the book it appears in striking natural colors.

Exclusive For Frigidaire Dealers . . . Store Planning Guide Created by Frigidaire and Raymond Loewy!

See what happens when Frigidaire's merchandising "know how"—outstanding in the major appliance field—is combined with the genius of Raymond Loewy Associates, famous designers of scores of the nation's leading stores!

It's "Design for Selling," a great new store planning guide available soon to *Frigidaire dealers exclusively!* It points the way to far more efficient selling because it—

Shows how to make completely functional use of floor space . . . goes far beyond mere "surface suggestions."

Is designed for use with any type of store, any size department, any style of decoration.

Provides working drawings which enable a local architect or builder to re-design any Frigidaire dealer's store or department.

Presents full-color drawings which show what can be accomplished with varying types of stores and departments.

Includes invaluable advice on store location, department location, store fronts.

Most important of all, "Design for Selling" offers Frigidaire dealers a sound, basic sales-floor *IDEA* which locates display and selling areas on, but not in, the line of traffic . . . concentrates customer attention upon the product being sold . . . makes profitable step-up selling easy . . . enables the salesman to progress from approach to close without a break!

FRIGIDAIRE STORE PLANNING GUIDE AND FRIGIDAIRE DEALERS

This exclusive new store planning guide is one more example of the leadership that has created thousands of requests for the Frigidaire franchise. With such leadership —demonstrated over and over again in Customer Research, Market Research, Engineering, Manufacturing, Merchandising, Service—Frigidaire dealers can be sure of continued . . . *Leadership in Sales!*

BUY AND KEEP MORE WAR BONDS!

Look to Frigidaire for Leadership through DEALER AIDS!

For Excellence in War Production

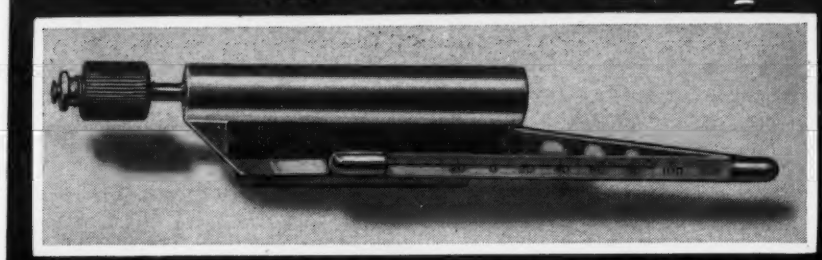
ARMY (E) NAVY

FRIGIDAIRE
Division of
GENERAL MOTORS

DAYTON 1, OHIO • LEASIDE 12, ONTARIO

REFRIGERATORS • RANGES • WATER HEATERS
HOME FREEZERS • ICE CREAM CABINETS
COMMERCIAL REFRIGERATION • AIR CONDITIONERS
BEVERAGE, MILK, AND WATER COOLERS

Over 1,000,000 jobs are waiting for this



THERMOSTATIC CONTROL TESTER

the instrument that detects control defects

A pocket size tester that accurately and quickly analyzes a defective thermostat

features

1. Indicates quickly cut-in and cut-out temperature.
2. Does not require removal of control from cabinet.
3. Eliminates un-warranted tampering with thermostatic controls.
4. Shows customer defective part.
5. Scientifically designed for easy operation.
6. Excellent shop tool for adjusting controls.

(MODEL A100) $19.50

Complete with pocket case, instructions and bulb adaptor. Ready for use. Fully guaranteed.

ORDER DIRECT OR SEE YOUR JOBBER

AIRCRAFT SERVICE COMPANY

435 MELWOOD STREET · PITTSBURGH 13, PA.

Jobber Inquiries Invited

Bendix Dealers--

(Concluded from Page 1, Column 2)

automatic washer has 14 improvements, chiefly in its new cycle, top fill, power unit, and timer, the company says.

First shipments went out July 16, and now are proceding at better than three carloads daily, it was announced.

Deliveries of the Bendix ironer and automatic dryer have not yet started, but the company declares that they will be shipped in quantity in the near future.

The washer is being produced in the company's plant in Clyde, Ohio, where production of 1,500 daily is expected by Jan. 1. By that time Ingersoll Steel Mfg. Co. of Chicago will also be producing Bendix washers at a daily rate of 1,000 to 1,500, it was announced.

Just before Bendix made its new model announcement on Sept. 16, dealers in the New York City area were informed of company plans by Lynn Eaton, eastern sales manager, at meetings with two Bendix distributors, Bruno-New York and Krich-Radisco, Inc.

Firestone Line--

(Concluded from Page 1, Column 4)

offered in 1942 will be included in the 1946 line, which will also feature models "quite different" from prewar styles, he declared.

Top model refrigerator will have storage space for frozen foods and a high humidity section, according to Mr. Tompkins, who said that the line would offer home freezers also.

A new table model electric range is likewise planned.

"We also have under development such items as electric dishwashers, garbage disposal units, steel kitchen cabinets, sewing machines, hot water heaters, and air conditioning units," declared Mr. Tompkins.

Frigidaire Distributors See New Models

When Frigidaire branch managers and distributors examine the new line: (left to right) D. K. Baxter, president of D. K. Baxter Co., Sioux City; P. K. Abry, Pittsburgh branch manager; L. A. Clark, assistant general sales manager; E. F. Johnson, vice president of General Motors; F. W. Beecher, commercial sales manager at Oakland, Calif.; and E. R. Godfrey, general manager of Frigidaire.

• • •

Training--

(Concluded from Page 1, Column 3)

N.E.W.A. committees have disclosed a need for such basic sales training material, Mr. Pyle explained, and N.E.W.A. was prompt to accept the opportunity offered by E.E.I. to jointly develop the basic training feature of this program.

"In view of the progress which has been made thus far in the E.E.I. program and that association's willingness to augment their own extensive efforts by combining the talents of both groups, it has been possible to develop a basic sales training course of equal worth to utilities and wholesalers, and at the same time, to insure by that arrangement utilization of the most modern and expert sales training methods," stated Mr. Pyle.

Boston Distribution Meeting To Be Held Oct. 15-16

BOSTON—The seventeenth annual Boston Conference on Distribution will hold its meetings at the Statler hotel Monday and Tuesday, Oct. 15 and 16.

The Conference's two major themes will be the coming trends in distribution costs and in postwar prices. Authorities in these fields will discuss various aspects of the problems. Director of the program is Daniel Bloomfield, 80 Federal St., Boston 10.

Frigidaire Plans--

(Concluded from Page 1, Column 2)

many commercial products during a tour of the huge Dayton plant which are daily producing an increasing number of household appliances.

Among the officials of Frigidaire who addressed the group were: E. R. Godfrey, general manager; P. M. Bratten, general sales manager; M. M. Roberts, works manager; L. A. Clark, assistant general sales manager; H. F. Lehman, assistant general sales manager; S. M. Schweller, chief engineer; P. H. Brennan, commercial sales manager. H. M. Kelley, appliance sales manager; F. H. Peters, advertising manager; W. F. Switzer, manager market research and organization; F. Gilbert, sales promotion manager; P. V. Sprout, service manager; O. F. Kuhlman, product distribution manager; and G. A. Ames, vice president, General Motors Acceptance Corp.

Immediately following the close of Frigidaire's "Reconversion-to-Sales" conference at Dayton, all Frigidaire distributors will conduct dealer conferences in each district throughout the country.

The dealer conferences, to be held within the next two weeks, will make Frigidaire one of the first major reconverted manufacturers to present completed plans and actual sales operations to their field organization, declare Frigidaire officials.

Mills direct drive compressors

TOMORROW, YOUR CONDENSING UNITS WILL *occupy less space*

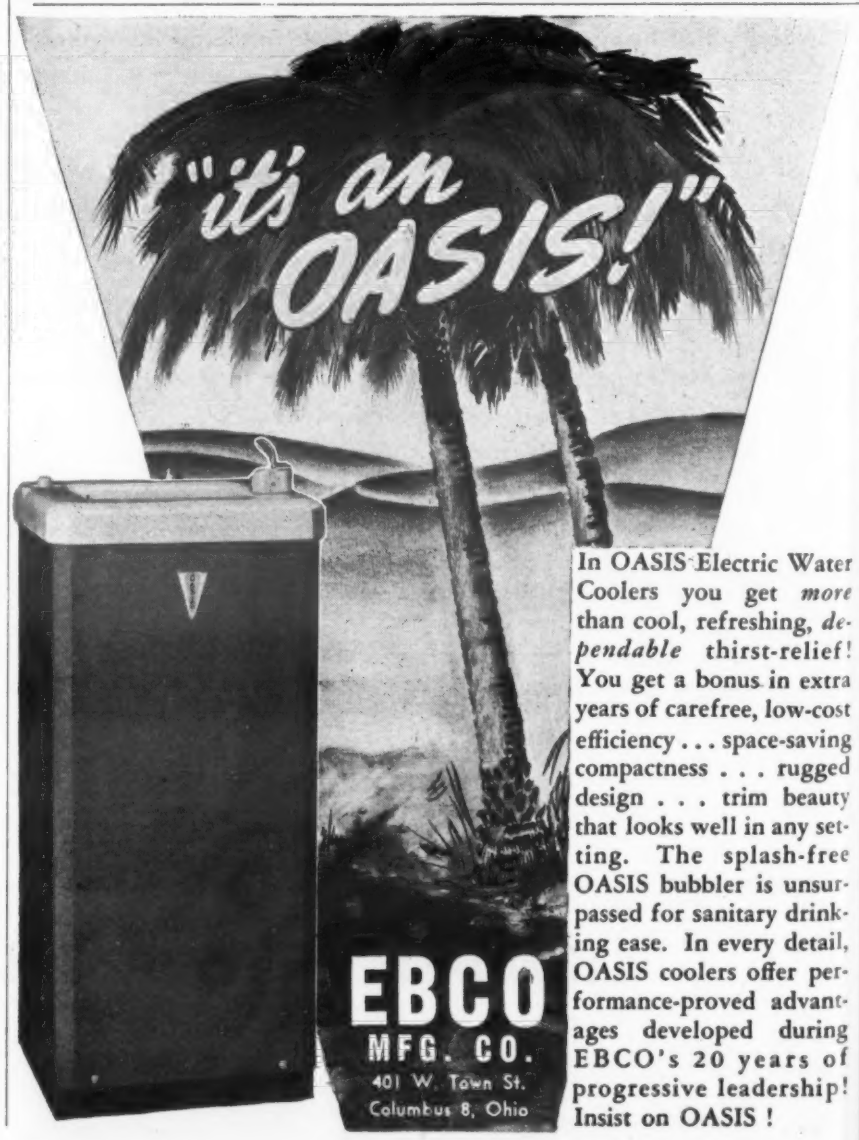
Less than half the size of conventional belt-driven units of the same rating, the new Mills ⅓ H. P. Direct Drive Compressor occupies less cabinet space than any previously conceived condensing unit.*

* We can't produce enough for everyone at once. May we, nevertheless, plan with you for the application of these space-saving compressors in your future cabinets?

MILLS *Industries, Incorporated*

Refrigeration Division

4100 Fullerton Avenue · Chicago 39, Illinois



In OASIS Electric Water Coolers you get *more* than cool, refreshing, *dependable* thirst-relief! You get a bonus in extra years of carefree, low-cost efficiency . . . space-saving compactness . . . rugged design . . . trim beauty that looks well in any setting. The splash-free OASIS bubbler is unsurpassed for sanitary drinking ease. In every detail, OASIS coolers offer performance-proved advantages developed during EBCO's 20 years of progressive leadership! Insist on OASIS !

RETAIL-MINDED KELVINATOR

Not just words...a business future!

"Retail-Minded Kelvinator" is more than a phrase . . .

It sums up the whole meaning of the Kelvinator franchise and the Kelvinator way of doing business.

It means a sounder way of business thinking . . . a better way of business life for the men who make up the finest retail organization in the appliance industry.

It means a future for those who become a part of this retail organization . . . a position of dignity and importance in their communities . . . and sounder business opportunity for the long pull *after* the first big years of the postwar boom are past.

The principle of "retail-minded thinking," on which the Kelvinator Franchise is based, has set new standards in business and human relations for this industry because its main premise is this: *Kelvinator feels that no sale is completed until the product leaves the retailer's floor.*

Every word, every thought in the Kelvinator Franchise is conditioned by this basic "retail-minded" concept. That is why the Kelvinator Franchise provides for . . .

A Limited Number of Dealers . . . with each dealer big enough to cover his market and each market adequate to insure a sound, highly-profitable return . . . year in and year out . . . on his investment of time, money and effort. And the net result of this Kelvinator *selective* market and dealer policy is . . . *more sales per dealer.*

Retail-Minded Product Policies . . . a line of products so simplified and compact as to reduce retailer's investments in inventory to the lowest in the industry. This retail-minded policy enables Kelvinator Retailers to concentrate on high-unit-of-sale, volume products . . . with no slow-moving, low-volume models to raise inventory costs and cut turnover.

Competitive Prices . . . Kelvinator's aim will be to continue its competitive pricing policy with a proven step-up plan offering visible, salable features and values at each step . . . thus providing a much higher unit per sale.

Retail-Minded Merchandising . . . advertising, sales promotion and a full sales training program built from the retailer's point of view and designed to move products off the floor into the homes of users.

This is what "Retail-Minded Kelvinator" means . . . This is why Kelvinator Retailers know that the Kelvinator Franchise is the most valuable in the industry today!

The most Valuable Franchise in the Appliance Industry

LOOK AHEAD WITH RETAIL-MINDED

Kelvinator

DIVISION OF NASH-KELVINATOR CORPORATION

Kenosha · Milwaukee · DETROIT · Grand Rapids · Lansing

Tune In

October 3rd
New Nash-Kelvinator Hit Radio Show moves to CBS.
Listen every Wednesday evening
10:30—11:00 E.W.T.

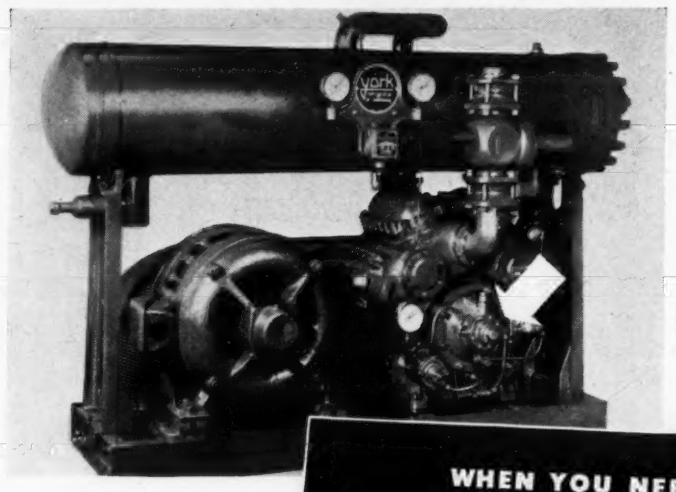


Photo Courtesy of York Corp.

WHEN YOU NEED
PRECISION-BUILT SMALL PUMPS
Specify TUTHILL

Build Pressure Lubrication Into the Design of Your Equipment

For "built-in" pressure lubrication, Tuthill offers a line of stripped pumps to meet your exact requirements. Illustrated above is Model RCSA, an automatic reversing pump which delivers from the same port regardless of direction of shaft rotation. Many adaptations of this and other types to fill your specifications. Sizes from 1 to 50 g.p.m. Pressures up to 100 p.s.i.
Write for details.

TUTHILL PUMP COMPANY
939 EAST 95TH STREET, CHICAGO 19, ILLINOIS

Dealers Expect Many 'Out-of-Basement' Laundry Installations

CHICAGO—More than 25% of all home laundry equipment will be sold in ensembles for "out-of-basement" installation, a majority of appliance dealers believe, according to results of a survey released by Fred C. Margolf, manager, home laundry sales division, Edison General Electric Appliance Co.

He announced at the same time that Hotpoint washing machines were in limited manufacture again for the first time since 1942, and will be available to consumers in early 1946.

The survey brought answers from 2,360 specialty appliance dealers, 1,053 furniture stores, 816 hardware stores, 256 department stores, 86 auto accessory, and 81 variety stores, as well as 495 "miscellaneous" dealers. The figures showed that 3,006 were "downtown" locations, while 1,190 dealers said they operated in neighborhood shopping centers.

The poll is the final sampling of opinion on postwar merchandising conditions made among dealers receiving Hotpoint's "Planned Electric Merchandising" home study course.

With the resumption of appliance merchandising, the study course will be discontinued to the approximately 20,000 carried during the war period, and a list of Hotpoint's dealers will be substituted. The material will be altered to aim at sales training and merchandising messages with emphasis on product features.

In analysing possible trends reflected in the survey, Mr. Margolf called attention to the figure showing that 79.2% of the dealers would sell automatic washers, noting that 46.6% had sold them previously. He said that all home laundry activities would benefit from the interest centered upon this new appliance.

The increased percentage of dealers does not indicate a customer preference approaching the dealer percentage, he emphasized, pointing out that all of the dealers would sell conventional washers.

Commenting upon the answers to the opinion question indicating that more than 60% of the dealers look for 25% or more of the laundries to be designed for rooms adjacent to kitchens and otherwise "out-of-basement," he attributed much of this sentiment to increased interest in "complete" laundry ensembles of appliances.

The figure showing that more than 60% of the dealers will sell metal cabinets, and more than 50% will sell tumbler clothes dryers, gives a line on the high percentage who will design "complete" laundries, he said.

Mr. Margolf made a special point of the trend toward merchandising washers with a single size tub. Dealers will be able to carry a complete stock of washers with a fraction of the inventory formerly necessary where many tub-sizes made up a line of machines. Another merchandising benefit will be that they can carry an adequate display of "lesser known" appliances such as ironers and dryers.

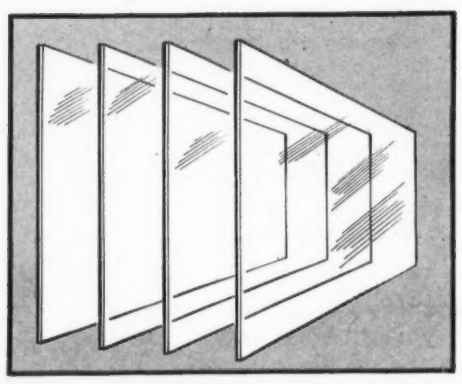
He expressed the opinion that ironers have suffered in sales volume in the past because few dealers displayed an adequate selection, and fewer merchandised them by demonstrations that would show customers the usefulness of the machines. With increased emphasis on dramatic selling with store displays and demonstrations as regular merchandising aids, these newer types of laundry aids will sell in a closer ratio to washers, he said.

In addition to conventional and automatic washers, Hotpoint will make tumbler dryers, cabinet flat-plate ironers, portable rotary ironers, and metal wall and base-cabinets. Production on the full line will be underway by October, with the exception of the automatic washer. Officials say it will be well into 1946 before that machine is in manufacture.

Things Are Cooking on Hotpoint Range Line

Jean Schaid (left) removes sizzling baked ham with all the trimmings from the first Hotpoint electric range to come off the line since 1942, as Ward R. Schafer, vice president, and G. L. Rees, range manager, watch approvingly.

REDUCE CASE GLAZING COSTS with *Thermopane*

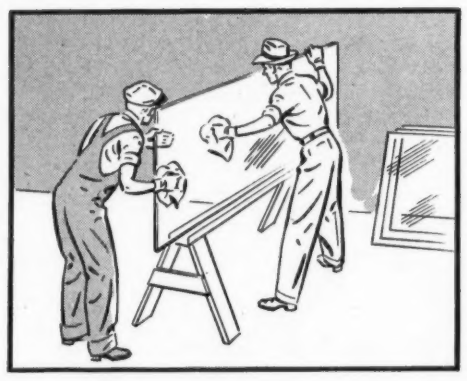


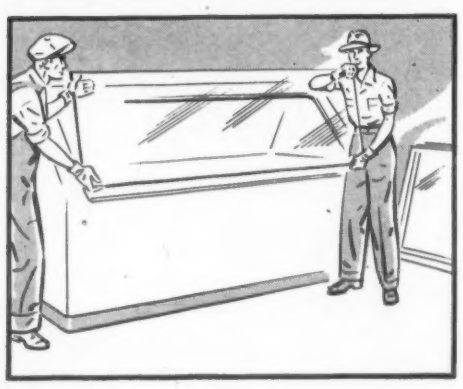
with ordinary glass . . .

Four pieces of glass are necessary to glaze most frozen food cabinets.

•

And there are still *four pieces of glass* TO BE CLEANED *—on both sides.*

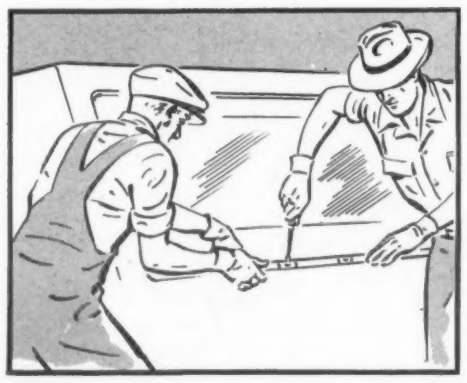




These *same four pieces of glass* must be installed in the case by manual labor.

•

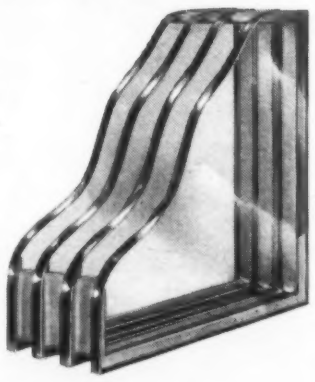
AND—*these same four pieces of glass* must be hand-sealed against moisture and dirt infiltration.



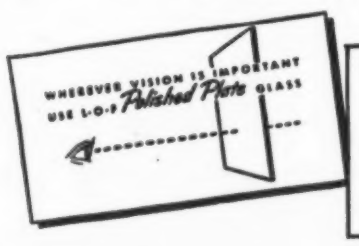
BUT WITH THERMOPANE ONLY 2 STEPS ARE REQUIRED!

Thermopane comes to you as a single unit . . . all ready to install — like a single light of glass. Its two inner surfaces were scientifically cleaned at the factory . . . and the entire edge is sealed against dirt and moisture infiltration by the patented *Bondermetic Seal.*

All you have to do is (1) Clean the *two outer surfaces* of the unit . . . (2) Seal the unit in the opening. No extra fuss. No extra bother. Time saved. Money saved. Labor cut to a minimum. So when you plan your frozen food cases, be sure to specify *Thermopane*—made to size at our factory—so that you can cut your glazing time. For the new Don Graf's Technical Sheets on *Thermopane,* write Libbey·Owens·Ford Glass Company, 6695 Nicholas Building, Toledo 3, Ohio.



Thermopane is also available in Canada.



L O F **LIBBEY·OWENS·FORD**
a Great Name in **GLASS**

THE GAUGE THAT CAN BE KEPT ACCURATE *Always*

No one has ever found a way to make a pressure gauge that can't be knocked out of adjustment. But Marsh has developed the next best thing—a handy, basically sound way to correct a gauge that has been thrown out of adjustment by shock or over-pressure.

When a Marsh pointer fails to return to zero, you simply turn the "Recalibrator" screw, as illustrated above, until the pointer coincides with the zero mark.

Most errors in gauges are caused by distortion of the bourdon tube, which produces an improper relation between the tube and the movement. The conventional method of merely resetting the pointer does not correct this relationship. As a result the gauge may remain incorrect at certain points on the dial.

But the "Recalibrator" actually re-establishes the relation of the tube to the movement—actually does "re-calibrate" the gauge.

The manufacturer who takes the most pains to build a gauge that *is* accurate would naturally be the manufacturer to provide the best means of *keeping* it accurate!

JAS. P. MARSH CORP., 2067 Southport Avenue, Chicago 14, Illinois
Export Department: 155 East 44th Street, New York 17, New York

MARSH
Refrigeration Instruments

COMING!

THE REFRIGERATORS THAT WILL START YOUR BUSINESS RIGHT . . . AND KEEP IT RIGHT!

There are two ways to look at your coming refrigerator business.

One way is to look only at your "immediate" sales in the first flush of buying.

From that point of view, just about any refrigerator line is good—no doubt about it!

But a more farsighted view will tell you that to start your business *right—and keep it right*—you want the refrigerator line that's *best* for your business!

We sincerely believe that the G-E Refrigerator line is your best foundation for a prosperous business—a *lastingly* prosperous business! Here's why:

- **The war has brought** home the importance of *dependability* in refrigerators. The fame of the G-E "sealed-in-steel" unit, backed by unprecedented advertising, is more widespread than ever. "A million G-E Refrigerators in service ten years or longer" is a *fact*—an *established* fact!

- **G-E Refrigerator** production plans are geared to today's markets—to the needs of *your* prospects. We are concentrating our *first* production on the 7-foot de luxe model described at left, plus a *standard* 7-foot model, and a limited number of 6-foot standard models.

- **These models are** *most* wanted *today*—as established by extensive consumer surveys. In addition, our policy of concentrating our first production on fewer *models* means that there will be a greater number of G-E Refrigerators for you to sell in the coming period when demand will exceed supply. That means *more* business for you!

- **Later, of course,** G. E. will produce other models—new models with new and profitable features. Both our "immediate" models, now well along in production, and our later models, are G. E. *all the way through.*

A firm foundation for your business!

This 7-foot G-E de luxe refrigerator is in production *now.* It's the most saleable, profitable box you could handle! The *size* is right (independent surveys show the 7-foot size is most wanted today). The *features* are right: Ample storage space for frozen foods inside "Super Freezer." Adjustable sliding shelf. Big (10.1-quart capacity) high-humidity drawer. 550-cubic inch fresh meat compartment. And its *price* will be right, too—a "real-value" price that people want to pay, but with ample margin for *you!*

If you're interested in establishing a prosperous, *lasting* refrigerator business, then G-E is your line!

Refrigerators

"THE REFRIGERATORS MOST PEOPLE WANT MOST"

GENERAL ELECTRIC

Gilmer BELTS

Gilmer V-Belts fit. Once they are installed no return trips for re-adjustment are necessary. Gilmer V-Belts fit because cords are normalized to minimize stretch.

And Gilmer V-Belts have all the other important qualities that count. They are ruggedly built for long life. They assure dependable performance. And there are sizes for all needs, for Gilmer V-Belts are made on the largest assortment of V-moulds in the world. Get in touch with your jobber today.

L. H. GILMER COMPANY
Tacony, Philadelphia 35, Pa.
Division of United States Rubber Company

Nearly Everyone May Sell Appliances, But-- Housewives Prefer Prewar Sales Leaders

NEW YORK CITY—Despite the fact that a great variety of retail outlets are apparently planning to carry electrical appliances, housewives intend to patronize chiefly the three big prewar sellers: appliance dealers, utilities, and department stores.

These indications were noted in a recent survey conducted for *Printers' Ink* magazine, in which 1,096 women were interviewed regarding their plans to purchase one or more of 16 appliances. Results are shown in the accompanying table.

Questions asked for the survey were: "Which of these do you plan to buy? From what kind of dealer do you plan to buy?"

Answers on electric refrigerators revealed that 45.1% of those women questioned plan to make their purchase from a utility company; 20.9% from an appliance dealer; 17% from a department store; 12.1% from an electrical store; 2.5% from hardware stores; 3.6% from other types of outlets.

Appliance dealers are preferred by would-be buyers of home freezers, getting 35.2% of the votes. Utilities are second with 22.4%; electrical stores, 20%; department stores, 11.2%; hardware stores, 1.6%.

Electric utilities also ranked first as the preferred seller of electric ranges, and electric irons, besides refrigerators.

In addition to the home freezers, dealers won first choice in sales of radios (standard and FM), television receivers, washers, and electric dishwashers.

Department stores were first in electric toasters, percolators, vacuum cleaners, and electric ironers.

The reasons for their preferences given by the women questioned were: (1) merchandise selections, (2) merchandise values, (3) merchandise reliability, and (4) good service.

There is a preponderant vote for the public utilities when a gas refrigerator is to be purchased, due largely to a habit of long standing.

FOOD MUST BE CONSERVED

Refrigeration today is performing a vital service by guarding and preserving for future use, priceless food which might otherwise be wasted. Write for literature.

GENERAL REFRIGERATION DIVISION

Yates-American Machine Co. Beloit, Wis.

Kipman
AUTOMATIC REFRIGERATION

Crosley Produces Its First '45 Model

Frank A. Schotters (left), Crosley vice president in charge of production, congratulates John W. Craig (right), works manager of the plant, as the first 1945 Crosley Shelvador refrigerator rolls off the production line, while Lee Stratton (center), refrigeration sales manager looks on.

From What Kind of Dealer Will You Buy?

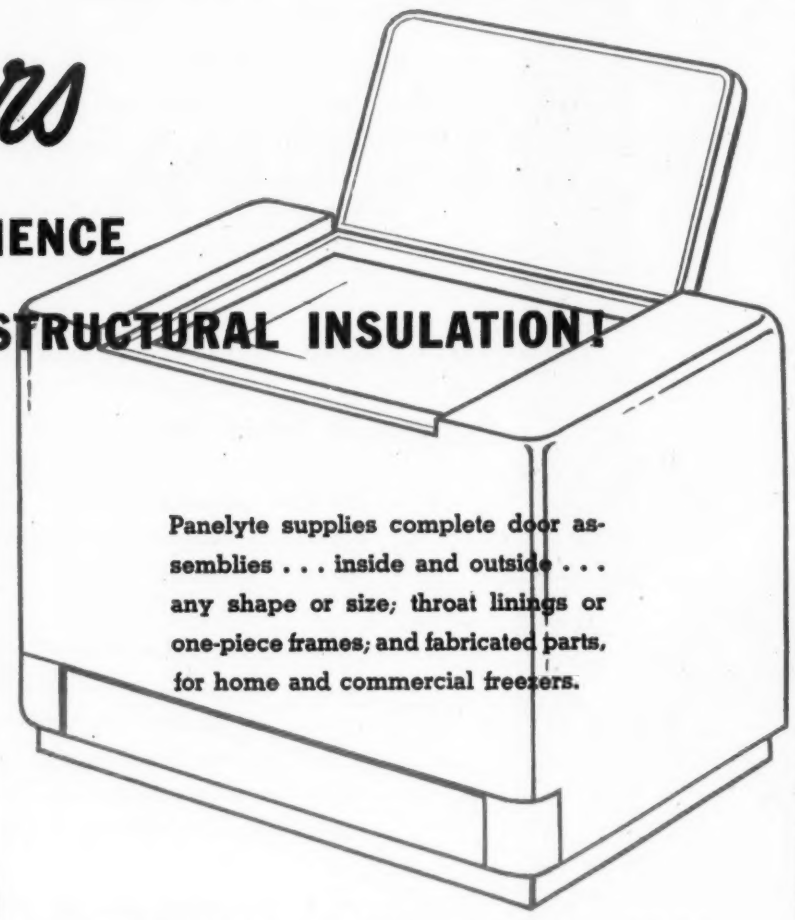
Percentage of Total Answers for Each Class

	Electric or Gas Co.	Department Store	Hardware Store	Dealer Agent	Electrical Store	Others	Don't Know	No Answer	Base
Refrigerator									
Electric	45.1	17.0	2.5	20.9	12.1	3.6	3.8	2.5	364
Gas	71.2	9.6	1.9	15.4	....	....	5.8	1.9	52
Deep freezer	22.4	11.2	1.6	35.2	20.0	2.4	5.6	1.6	125
Cooking									
Range, gas	52.2	21.0	10.2	18.5	2.5	3.2	5.7	....	157
Range, electric	46.0	15.0	2.7	14.2	17.7	0.9	3.5	2.7	113
Electric toaster	26.1	31.7	4.6	7.3	25.4	0.7	3.3	1.7	303
Electric percolator	30.7	43.6	1.0	5.0	17.8	1.0	3.0	1.0	101
Pressure cooker	7.2	54.3	12.3	15.2	8.0	0.7	2.9	0.7	138
General									
Radio receiver	1.3	23.5	2.7	55.1	12.0	3.1	4.4	2.2	225
F-M receiver	1.8	17.9	3.6	73.2	8.9	1.8	3.6	3.6	56
Television receiver	8.2	21.6	0.5	50.5	10.3	1.5	6.7	2.6	194
Washing machine	24.0	24.9	3.8	45.4	11.8	4.8	4.2	1.9	313
Vacuum cleaner	17.0	34.0	3.0	32.8	14.0	0.9	2.1	3.0	235
Electric iron	37.2	33.5	5.5	12.6	21.6	0.9	1.4	3.7	218
Electric ironer	23.8	28.6	7.9	20.6	20.6	1.6	1.6	1.6	63
Electric dishwasher	22.0	13.6	....	35.6	18.6	5.1	5.1	6.8	59

Total percentages exceed 100 because some respondents indicated possibility of buying from more than one type of store.

AT THE SERVICE OF MAKERS OF HOME FREEZERS

15 years
INTENSIVE EXPERIENCE
IN REFRIGERATION STRUCTURAL INSULATION!



Panelyte supplies complete door assemblies . . . inside and outside . . . any shape or size; throat linings or one-piece frames; and fabricated parts, for home and commercial freezers.

Pre-War Refrigerator Manufacturers who used PANELYTE laminated plastic parts

★ AMANA SOCIETY
★ AMERICAN
★ ARTIC-ELECTROLUX
★ BOHN
★ COOLERATOR
★ CROSLEY
★ FRIGIDAIRE
★ GIBSON
★ GLOEKLER
★ HALL
★ HEINTZ & MUNCHAUSER
★ HERRICK
★ C. V. HILL
★ ICE COOLING
★ KELVINATOR
★ McCALL
★ MONITOR PROCESS
★ MONTGOMERY WARD
★ NORGE
★ PHILCO
★ RANNEY
★ REX
★ SANITARY
★ SEARS ROEBUCK
★ SEEGER-SUNBEAM
★ SERVEL
★ S. L. A. M.
★ SPARKS-WITHINGTON
★ STEWART-WARNER
★ VERING
★ VICTOR PRODUCTS
★ WESTINGHOUSE

This list is printed to indicate the length and breath of our experience with the refrigeration industry. Additions to our extensive pre-war facilities are in progress.
We are ready and eager to work now on designing and development work . . . to give you the benefits of our long and comprehensive experience . . . to prepare for the mass-production of Panelyte molded shapes and fabricated parts to meet your requirements.

PANELYTE the structural plastic
PANELYTE DIVISION ST. REGIS PAPER COMPANY 230 PARK AVENUE NEW YORK 17, N. Y.
★ RECORD MAKER IN DESIGN, DEVELOPMENT AND MASS PRODUCTION OF STRUCTURAL RESINOUS LAMINATED PARTS FOR THE REFRIGERATOR INDUSTRY

A recent advertisement indicating the breadth of Panelyte experience before Pearl Harbor turned our energies to production for Victory.

STRUCTURALLY, home freezers are closely related to refrigerators. Panelyte Service Engineers have the broadest, most intimate knowledge of the requirements of the refrigerator industry for breaker strips, inner door panels, structural and insulating parts, both molded and fabricated.

We are ready to discuss design, mass production techniques, costs and delivery schedules of Panelyte structural plastic parts with makers of home freezers. Your inquiry is invited.

PANELYTE the structural plastic
PANELYTE DIVISION ST. REGIS PAPER COMPANY 230 PARK AVENUE NEW YORK 17, N. Y.

Sales Offices: Atlanta, Boston, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Kansas City, Los Angeles, Nashville, New Orleans, Phoenix, Portland, St. Louis, St. Paul, San Francisco, Seattle, Syracuse, Trenton; Buenos Aires, Johannesburg, Mexico City, Montreal, San Jose, Sao Paulo, Sydney, Toronto, Vancouver

★ RECORD MAKER IN DESIGN, DEVELOPMENT AND MASS PRODUCTION OF STRUCTURAL RESINOUS LAMINATED PARTS FOR THE REFRIGERATOR INDUSTRY

"SHERER EQUIPMENT HAS ALWAYS MEANT Profits FOR ME... YOU BET MY NEXT BUY WILL BE A SHERER!"

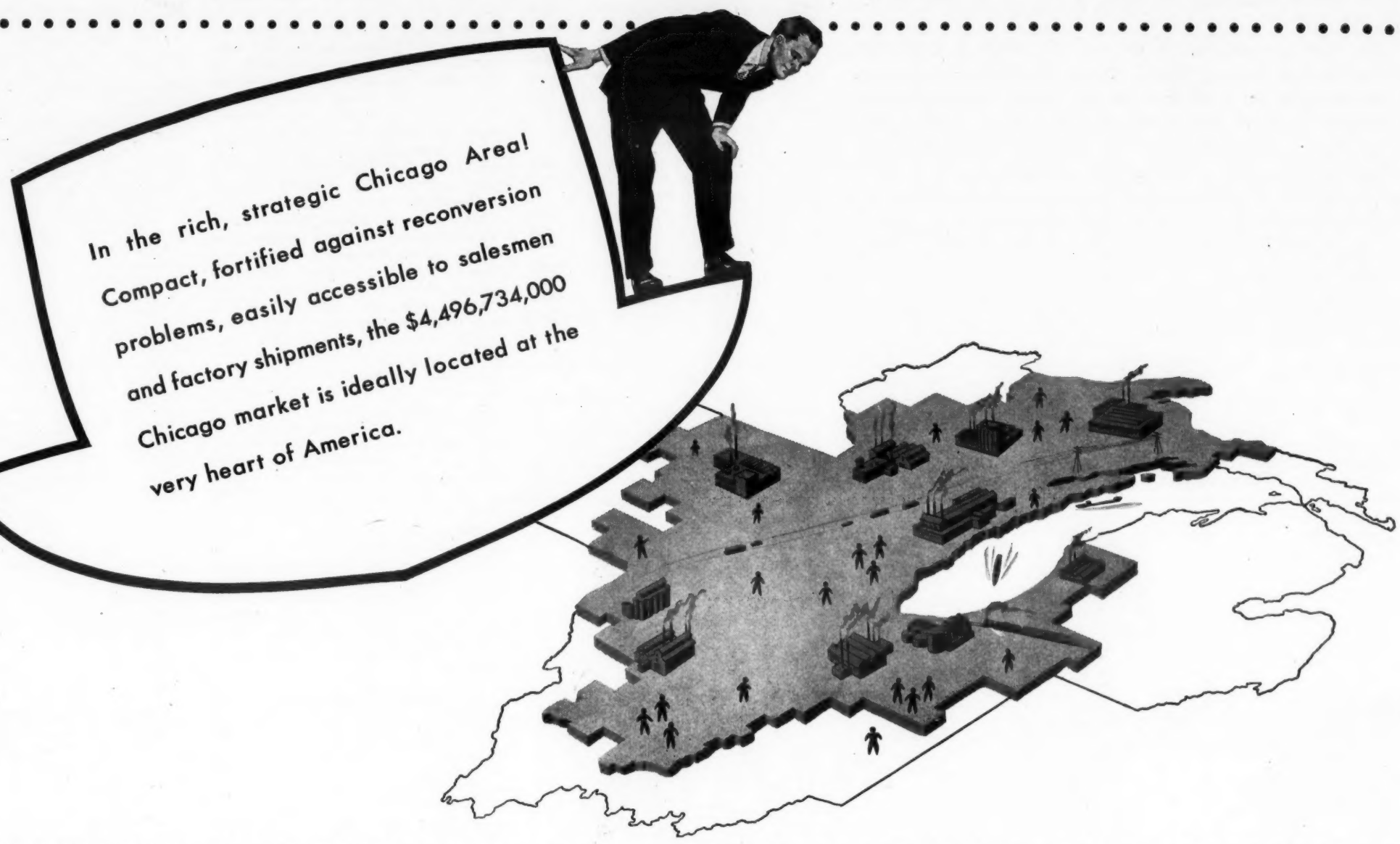
YOU CAN COUNT ON SHERER FOR QUALITY!

Thousands of satisfied SHERER owners are looking forward to the day (soon now) when they can get the new Sherer equipment they need for the *bigger* and *better* business they have long planned. For all of them SHERER equipment has always meant *newest design*, *efficient performance*, and *economical operation*.

Sales to merchants like these are in store for Sherer distributors—who are assured of a full line, of finest quality, at prices that will bring them VOLUME and PROFITS. That's why we say, "*Smart are the distributors who plan to go ahead with Sherer!*"

SHERER
REFRIGERATOR PRODUCTS
SHERER-GILLETT CO., Marshall, Mich.

WHERE *can you solve your postwar selling problems?*


In the rich, strategic Chicago Area!
Compact, fortified against reconversion
problems, easily accessible to salesmen
and factory shipments, the $4,496,734,000
Chicago market is ideally located at the
very heart of America.

WHAT *does this great market offer?*

A tremendous pent-up demand for autos, washing machines, refrigerators and "big unit" products generally. Dealer and consumer surveys reveal a *buying* demand running into the billions. Here is a market well fortified by diversified income and huge savings... famous for its responsiveness to advertising and its record-breaking volume buying.

HOW *can you get started fast with volume sales?*

In this one compact market there is more postwar business than will be available in 13 states combined. The Chicago area offers enough business to take the entire output of some manufacturers. Here you can get immediate volume and at the same time build solidly for a continuing, profitable operation.

WHY *is the* CHICAGO TRIBUNE *your best medium?*

One out of every 3 families in 756 cities and towns of 1,000 or more population in this vital area reads the Tribune on weekdays—on Sundays, it is practically every other family. Bought, read and *bought from* as is no other medium in the Chicago market, the Tribune is a powerhouse among dealers and consumers. Seven days a week it hits with a selling impact that gets *action*. Only the Tribune gives you a choice of monoroto, coloroto, comicolor, newsprint color, or black and white—at milline rates which are among the lowest in the country.

WHEN *can you get going?*

Today! Now available for your study and use is a specific sales program based on the findings of an auto and household appliance investigation among consumers and dealers. To get these pertinent facts, address C. S. Benham, Manager, National Advertising, Chicago Tribune, Tribune Tower, Chicago 11, Illinois.

CHICAGO TRIBUNE

THE WORLD'S GREATEST NEWSPAPER

August average net paid total circulation: Daily, over 1,025,000; Sunday, over 1,300,000.

Billion-Dollar Market for Air Conditioning Is Predicted by Economist

Broad, Continuing Expansion In Many Fields Seen In Comprehensive Survey of Refrigeration Industry

Editor's Note: We believe this to be a most comprehensive survey of the air conditioning and refrigeration industry. Drawn from records of manufacturers, distributors, government agencies, and trade associations and publications, it has just been completed by S. M. Ahmed, economist of Hirsch & Co., of the New York Stock Exchange.

His report covers the growth of the industry from its beginning, at the close of World War I, on through 1932, the year which began its importance in the nation's commerce, on into its part in recent war production, and finally a sketching of its estimated pattern through the next five years. Further statistics may appear in a future issue of the NEWS.

Air conditioning has become a vital part of our modern way of life. Already essential in a vast number of industrial, merchandising, and food production processes, its potentialities for further expansion and profitable operations seems almost unlimited.

The potential market for air conditioning is tremendous. Sales of more than 1 billion dollars are anticipated during this first postwar decade.

The figures that follow here are for the industry as a whole. They include both commercial and industrial refrigeration, just as air conditioning in the complete sense controls not only temperature but also humidity, purification, ventilation, and circulation.

When future opportunities are being talked about optimistically, most industries count heavily on an unprecedented postwar prosperity. The air conditioning industry, by contrast, finds itself in the enviable position of being able to anticipate prosperity for itself without visualizing more than a prewar prosperity for the rest of the nation.

Predictions as to the extent of the potential market and as to the rate at which it can be stimulated here must be based on meager statistics and on numerous assumptions.

The industry is still young, and long range statistics are not available. In the postwar years, trade groups hope to overcome this deficiency. But a definite trend *is* apparent from the limited amount of data.

Recent market surveys of the field predict a billion dollar industry in the postwar decade. Men in the industry, however, view the future with even greater optimism. Air Conditioning Manufacturers Association made the bold statement, "within another 10 years the aggregate value of air conditioning in use will be in excess of two billion dollars, and once that point is reached replacement and service needs alone should total about $350 million annually."

Willis H. Carrier, founder and chairman of the board of Carrier Corp., predicted that the rapid rate of growth experienced by the industry since 1932 should be maintained for the next 20 years. Before the war the volume of annual business had reached close to the $100 million level, and estimates for the year after V-J Day range upward of $200 million.

Growth Is Rapid

If we assume that air conditioning as an industry really began its growth after 1932, we can see in the following data that it has gone much farther in the 10 years period than electric refrigerators, radios, washing machines, electric ranges, and automobiles went during their comparable periods of growth.

The substantial and rapid increase in air conditioning during the three prewar years 1939-1941 point to similar expansion during postwar years. The number of residential installations from 1939 to 1941 increased 114%, commercial 118%, and industrial 143%.

The tremendous demand for air conditioning equipment by the armed services compelled the War Production Board to issue an order limiting the sale of equipment to essential users. In addition, during the war, several stores and other users relinquished, at government request, their air conditioning equipment for war purposes. These replacements, together with the business that would have been enjoyed during the war years, constitute a backlog probably equal to three or more years of normal demand.

Owing to pressure of business, manufacturers are now quoting the longest deliveries of any time in the history of the industry. Furthermore, postwar demand for many types of equipment, developed during war years and not yet available for civilian use, will continue for a few years far in excess of supply.

Despite the rapid rate of new installations in residential, commercial, and industrial fields in the prewar years, the saturation point in these markets is still in the distant future. Our study, based on data compiled from utility reports on installations, reveals that fewer than 1% of homes heated with central units, valued in excess of $12,000, had air conditioning units installed.

Only 3% of the department stores, 3% of doctors' and dentists' offices, 2% of drug stores, 7% of restaurants, 13% of theaters, and 30% of railroad cars were air conditioned. Many other markets have been barely tapped.

On the assumption that air conditioning even in these markets continues at a more accelerated rate than during the prewar period, it is estimated that the saturation point would not be reached for another 15 to 20 years.

Even now the replacement market is looming as a large factor. Some 35% of commercial and 40% of industrial installations were made more than 15 years ago. Demand for repair and replacement parts in 1945 is expected to average 35% higher than in 1944, which in turn was 25% higher than in 1943.

A report by General Industrial Equipment Division of WPB shows that at present a replacement market of $70 million exists in the refrigeration equipment in the food processing industries.

$1½ Billion Market

Over the ensuing years, after V-J Day, it is estimated that the industry should do $1 billion to $1½ billion dollars worth of business, of which 15% would fall in the unit-conditioner class, used in homes and small offices, 55% in central plants for comfort purposes in commercial establishments, and 30% in industrial applications.

Commercial air conditioning in the prewar years had developed to the point where it represented the largest proportion of the market's volume. The backlog, the new construction program, the normal annual growth in this type of business, all point to the belief that the commerical field will continue to be the major market for several years.

After saturation of commercial installations is reached, it is believed that residential installations will take up the slack and carry the industry forward.

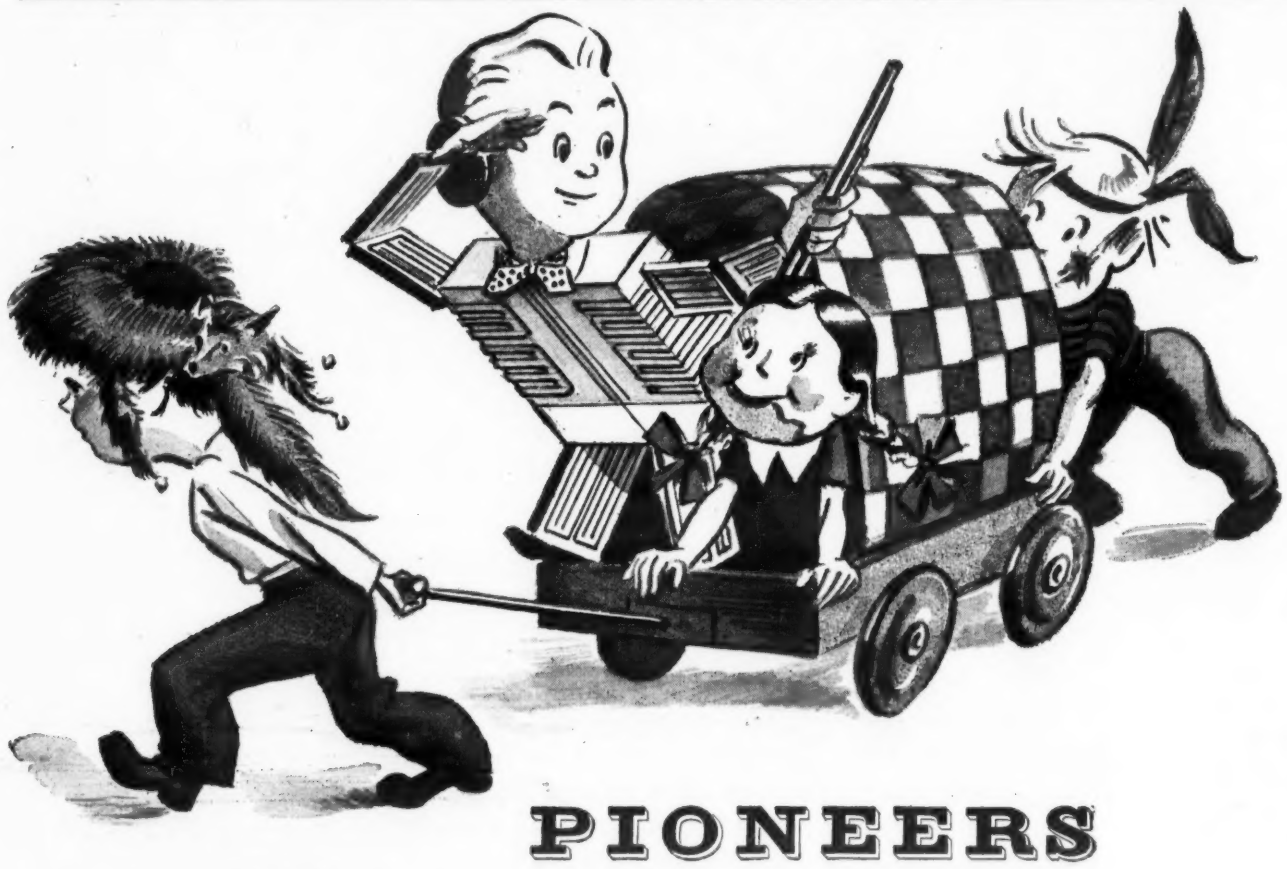
Air conditioning installations at the end of 1941, from figures based on horsepower as served by 150 utilities operating in territories with a population of 77 million or 58.5% of total, were distributed as follows:

Commercial	78.5%
Industrial	11.5%
Residential	2.0%
Unclassified	8.0%
	100.0%

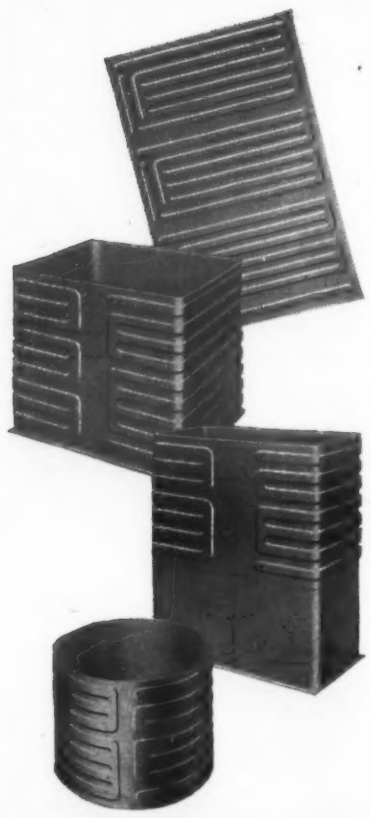
A more specific idea as to the particular demand factor for air conditioning is necessary even for a general appreciation of the size of the total market and the lines along which expansion will probably be most marked.

The immediate future will doubt-

(Continued on next page)



PIONEERS



STANGARD'S long years of experience in the refrigerating field plus their constant efforts for the betterment of low temperature equipment has resulted in their Prime Surface* Cold Plates. This plate...known for its uniform temperatures...faster pull-down...low first cost...economical performance...and trouble-free operation...makes for the highest degree of refrigerating efficiency.

The results of Stangard's *pioneering* will benefit you—take advantage of it!

Whether for locker plants...display cases...food counters...soda fountains...trucks...liquid coolers...ice cream cabinets...farm milk coolers...farm freeze cabinets...frosted food refrigerators...beverage coolers...rivet chillers...or low temperature test rooms...*it pays to specify Stangard Prime Surface Cold Plates!*

THE STANGARD-DICKERSON CORPORATION
46-76 Oliver Street, Newark 5, N. J.

*No intermediate factor between refrigerant and contact surface.

LITTLE "STAN," THE STANGARD MAN

STANGARD PRIME SURFACE COLD PLATES

Copyright 1945 by The Stangard-Dickerson Corporation

STANGARD KNOWS REFRIGERATION

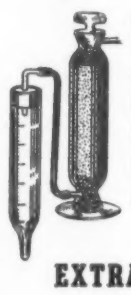
Service Engineers Should Know...

THE PURITY OF "VIRGINIA" SULFUR DIOXIDE IS CAREFULLY GUARDED

— the content of each cylinder — large or small — is analyzed 2 separate times.

1. CLEANLINESS TEST

A measured sample drawn from each container must be water-white in color and when boiled to dryness must leave no dirt, oil or other residue. This test detects undesirable impurities.



2. MOISTURE TEST

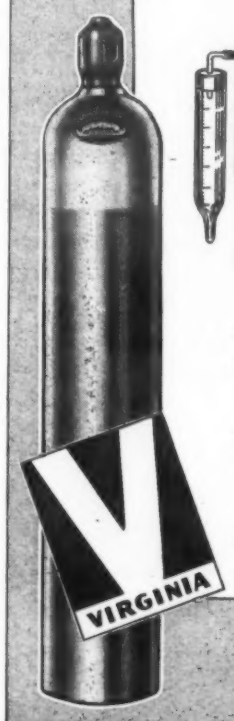
A sample of known weight from each cylinder is passed through P_2O_5 (a dessicant). Moisture calculated by the increased weight of the tube must not exceed 50 parts per million; low moisture prevents freeze-ups and oil-sludging.

EXTRA PRECAUTIONS

To prevent any possible contamination of "Extra Dry Esotoo" every cylinder is dry cleaned and finally rinsed with pure SO_2 before filling.

Each cylinder valve is inspected and reserviced to assure trouble-free operation — this saves time and money for the service engineer.

The name "EXTRA DRY ESOTOO" on the cylinder is your guarantee of quality. Sold by refrigeration supply jobbers everywhere.



VIRGINIA Smelting Co.
WEST NORFOLK, VA.
76 BEAVER ST., NEW YORK 5 — 131 STATE ST., BOSTON 4
Agents for Kinetic's "Freon-12" — "Freon-22" — "Freon-11"

How Air Conditioning Tops Other Industries

Products	Period, and Number of Units (or Dollars)		Per Cent Increase
Automobiles	1922 — $ 2,650,000		
	1941 — 4,800,000	— 19 years	81
Washing Machines	1928 — 809,000		
	1941 — 1,892,000	— 13 years	134
Electric Ranges	1927 — 110,000		
	1940 — 450,000	— 13 years	310
Radios	1927 — 5,000,000		
	1941 — 13,700,000	— 14 years	174
Refrigerators	1927 — 365,000		
	1941 — 3,500,000	— 14 years	860
Air Conditioning	1932 — 8,363,000		
	1941 — 95,000,000	— 9 years	1,035

Future of Commercial

(Continued from preceding page)

less favor the greatest growth in the commercial field. As the demand from this source is conditioned by the profit motive, it will be sensitive to general business conditions. York's 1944 report lists 70 commercial peacetime markets for air conditioning. As an illustration, size and potentialities of the demand for some of the principal units are summarized below:

Theaters were among the first to install air conditioning. However, of the 18,000 theaters in operation, only 12.5% are air conditioned, mostly metropolitan and large houses. Second run cinema houses and neighborhood theaters represent the major market, with an estimated value of over $100 million. New theater construction from 1929 to 1940 averaged more than $50 million annually. Many more additional theaters in community centers and neighborhood locations will be constructed offering an additional market.

Immediate Market

Offices, public, and institutional buildings constitute the best immediately available market in dollar volume. Fewer than 3% of office buildings are air conditioned. Plans under way or actually completed for new construction and for renovation of existing building assure an enormous market. Air conditioning is becoming indispensable in offices of physicians and dentists, banking houses, and large corporations.

Government buildings, city halls, capitols, courts, museums, and libraries will require the purchase of large quantities of air conditioning equipment. Most of the public budgets have set aside large funds for modernization and new construction. Only a few of these buildings have been air conditioned, and most of these have been in Washington, D. C.

Department stores plan to spend more than $60 million of a projected billion dollar modernization outlay for air conditioning. The 1939 census showed 4,074 stores with annual sales of over $100,000. Fewer than 3% of department stores are air conditioned, and even in this small number of stores, it is generally limited to only a few floors or departments.

Chain stores during the years 1937-1939 spent $27 million for air conditioning. Up to 1939, fewer than 4% of stores were air conditioned. Postwar expenditures for installations will be more than double that during the prewar years.

Miscellaneous and variety stores represent perhaps the largest potential market with the least air conditioning in the retail field. Modernization expenditures, including air conditioning of the large units, aggregate millions of dollars. More than 25% of the stores in this group have plans to add air conditioning.

Super markets, which are having a mushroom growth all over the country, have made air conditioning a part of their architectural design.

The most successful beauty shops are those that have air conditioning, yet fewer than 1% of over 80,000 shops are air conditioned. Beauty parlors, grossing $230 million a year, are in a position to make substantial outlays for air conditioning.

Florists have experienced a war boom. The rise in sales began in 1942 and reached a peak of $300 million in 1944. To maintain flowers in fresh condition, air conditioning or refrigeration is essential.

While walk-in coolers and display cases are cooled, only a limited number of stores have general comfort conditioning. Jewelry, optical, camera, candy, and numerous other types of retail stores offer a huge postwar market of over $100 million.

Out of a total of 170,000 restaurants, only 6,600 are air conditioned—less than 4%. The number of restaurants is steadily increasing as the eating-out habit is growing. In some large cities 30 to 40% of the adult population eat out at least once a day. Air conditioning performs a wide variety of services in restaurants; in addition to its primary function of attracting trade, it helps to preserve food.

Hotels Good Market

In the hotel field at present 1,200 out of 25,000 hotels are partially air conditioned. Practically all the major hotels must have air conditioning sooner or later to keep their business. Hotels in the future will advertise "All Rooms Air Conditioned," instead of "All Rooms With Private Bath."

The deterring factor which held back air conditioning in hotels was the financial position of the hotels themselves. The war has changed that picture and brought the industry its greatest prosperity. With improved financial status they open up a large market.

Some 7,000 hospitals will increase the use of air conditioning in operating rooms, laboratories, and patient rooms. New hospitals are being constructed in greater numbers. Federal hospitals have increased from 474 to 827. Further expansion is expected, since recently $550 million was authorized for Veterans' hospitals.

There are more than 2,300 city clubs of which only 367 are air conditioned. They represent an investment of over $2 billion and their modernization expenses average several million dollars annually.

The air conditioning of passenger trains will be almost nationwide after the war. Improved freight car refrigeration will offer additional opportunities for sales. While, since 1933, railroads have been improving their equipment through air conditioning to hold passenger traffic, fewer than 30% of the passenger cars have been air conditioned.

The industry expects to make more than 1,000 passenger cars annually for four to five years. On the basis of a $6,000 air conditioning cost per car, the railroad market would represent a $6 million a year business. This would be in addition to the market for existing equipment.

Bus companies, operating some 30,000 buses in inter-city travel, should be in the market for equipment to offer comfort comparable to railroads. Air conditioning of buses was halted during the war years, with less than 5% of buses so equipped. Greyhound, with the largest fleet, should be the best customer, and is already negotiating for its requirements.

Foreign market will increase in importance after the war. American manufacturers have taken the lead and in no other country has the industry progressed as rapidly as here. America is the largest exporter of these products.

Despite exchange restrictions, followed by shipping difficulties which during the war years reduced export volume materially, American manufacturers sent in 1941 nearly $2 million worth of equipment to other countries. Postwar market is estimated at 5 to 10 times prewar demand.

The Industrial Market

There are 31 principal industries in which air conditioning is essential. Air conditioning started in "industry." It was here that it made its first great strides. In the postwar years industrial markets would rank next to the commercial applications.

Before the war many industrial processes were greatly improved or made cheaper by air conditioning. The war with its huge production demand intensified the importance of conditioned air in many plants where in prewar years it was not thought necessary.

Before the war, the chemical industry was the leading industrial customer, and the textile industry, which could not exist without humidity control, was second. Third was the food industry. The development of "frozen foods" is going to make this industry the largest customer in the future.

Metal working, war need processing industries, synthetic rubber plants, and aircraft industries became some of the best customers during war years. Furthermore, less than 10% of these plants have air conditioning.

Printing and publishing industry, first to use air conditioning, will be in the market for $150 million in new equipment and construction during the first postwar years, of which about $5 million will be spent for air conditioning.

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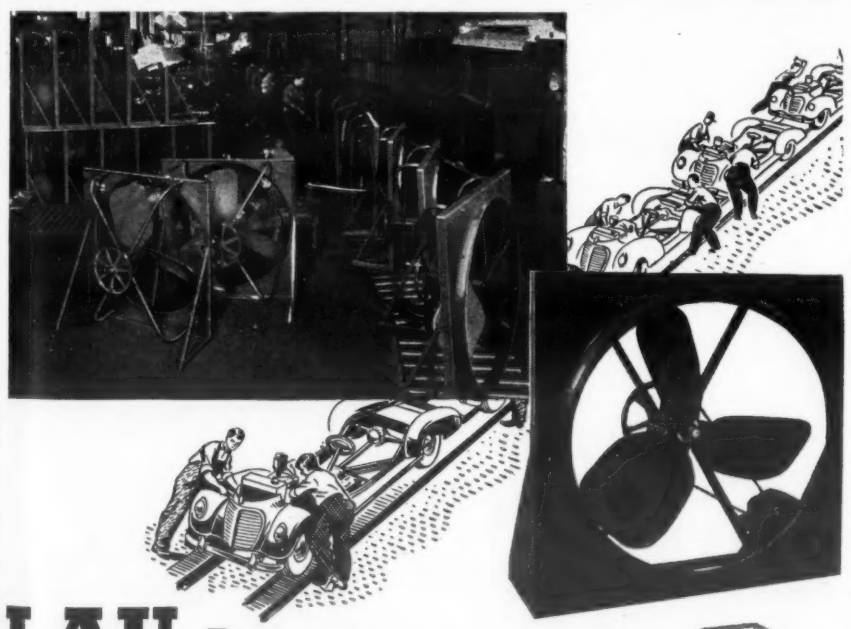


LAU Fans are MASS PRODUCED

In the Lau Blower Company's modern all-ground-floor plant, Lau fans and blowers are produced in large quantity by straight-line automobile assembly methods. All fan and blower parts, except motors and belts, are produced under one roof and flow smoothly to experienced assemblers. And, as in the automotive and refrigeration industries, savings effected are passed on to you, the customer. Mass production offers many other advantages. All parts are perfectly matched for maximum performance and are consistently uniform. Thus it is possible for you to compete on a quality, labor, and price basis against the entire field, and particularly against parts assemblers.

Practically all Lau products made today are going to war. A small percentage of our output is going for civilian use on priority. We can make reasonably prompt delivery on orders with proper priority. If you expect in the near future to be in the market for fans or blowers, send us your name and address for latest information about Lau product development, manufacturing restrictions, government regulations, and so on.

Package Units

Blower Assemblies

Propeller Fans

Blower Wheels

THE LAU BLOWER COMPANY
DAYTON 7, OHIO, U. S. A.
WORLD'S LARGEST MANUFACTURER OF FURNACE BLOWERS
Engineers and fabricators of general Air Handling Equipment
Single Inlet and Double Inlet Blowers • Propeller Fans • Accessories

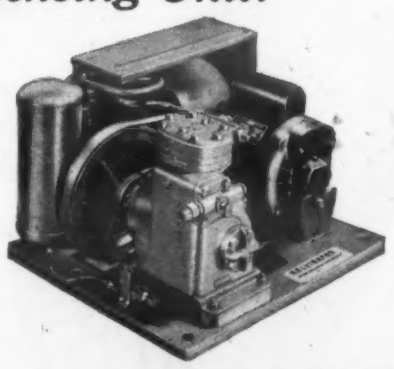
Customer: *"What's going on here?"*

Manager: *"Our fish are* really fresh *since we installed our new Kelvinator Condensing Unit!"*

The outstanding leader in commercial refrigeration for 30 years . . . Kelvinator Condensing Units give more economy, more performance . . . *more dependability!*

That's why, when specifying condensing units . . . service men say "Kelvinator!"

Kelvinator distributors and zone offices stock a complete line of refrigeration supplies. See them for your installation material such as tubing, controls, dryers, etc.



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CONDENSING UNITS
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FOR YOUR HOME—REMEMBER KELVINATOR REFRIGERATORS, ELECTRIC RANGES, WATER HEATERS AND HOME FREEZERS.

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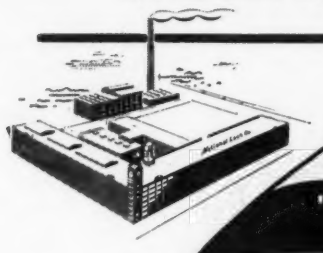
REFRIGERATOR HARDWARE
for domestic, commercial and low temperature cabinets

Standard and custom built designs. If you are a manufacturer or jobber, write for our new Refrigerator Hardware Catalog No. R-88.



SURFACE TYPE HARDWARE
"THRU THE DOOR" HARDWARE
EDGE MOUNTED HARDWARE
PLASTICS
DIE CASTING

NATIONAL LOCK COMPANY
Refrigerator Hardware Division
ROCKFORD, ILLINOIS

Refrigeration & A.C. Slated to Benefit Most from Popularity of Frozen Foods

(Continued from preceding page)

The textile industry spent about $95 million for plant equipment in 1939. Postwar capital expenditures for this industry are estimated at $150 million annually for three to five years. Cost of installing air conditioning is estimated at 10% of this sum.

Air conditioning has been a boon to high speed machine production of cigars and cigarettes. Each process from storing of leaf to packaging the finished product is carried out in controlled temperature and humidity. The industry expects to spend $10 to $15 million on new plant and equipment soon after the war. A good part will go for air conditioning equipment.

The largest source of immediate demand after the war is expected to be for new industrial installations and from existing plants that were unable to obtain adequate equipment during war years. Despite the fact that air conditioning has been widely used in industry for over 30 years, the market is still far from saturation.

Marine markets assumed a much larger role during the war years than ever before. Refrigeration and air conditioning are now widely used in combatant and cargo vessels. During the past three years, the number of ships built of over 200 gross tons were three times those built during World War I.

Admiral Land has proposed a peacetime merchant fleet for this country of 15 to 20 million dead weight tons, as compared with 10 million tons in 1941.

The construction, operation, and maintenance of such a huge fleet, in addition to prospects of the biggest naval tonnage in service, even after the war, assures a market of several million dollars annually.

The Food Industry

If in the postwar years air conditioning manufacturers stopped selling to all other industries and sold only to the food industry, their industrial sales would still amount to two to three times all prewar sales.

The food industry, if considered as a whole, is easily the largest in the United States, with value of products almost equaling the sum of its two nearest competitors—automobiles and steel. Despite the wide diversity of the food industry, refrigeration and air conditioning are employed to a large degree in manufacturing and storing.

One of the most significant developments of the past 15 years, and one that is destined to have a profound effect on the future of this industry, is the rapid growth of preservation through "freezing."

Refrigeration and air conditioning manufacturers probably will benefit more from this development than anyone else. Expansion of the frozen food industry during war years was checked by lack of new equipment. When restrictions on material are lifted, it will take many years for manufacturers to keep up with the demand.

The processing and packaging of frozen food continues to provide an increasing field for refrigerating equipment. Frozen food is packed by 450 plants and distributed through 30,000 retail outlets. Consumption of frozen foods increased 520% from 1936 to 1943.

Prior to the war more and more retail food stores were installing refrigerating facilities to handle these products. A recent survey lists need for 300,000 frozen food cabinets compared with 38,000 now installed.

Present distributors needs include 1,600 bulk storage rooms, with a capacity of over 100,000 pounds each with accessories. In addition a market exists for 125,000 cabinets, 2,000 compressors, and 4,200 refrigerated trucks.

Department stores are planning to invade the field. Allied Stores, Hudson, Macy, and Marshall Field have formed a research organization for the purpose. Frozen meat is expected to be a big item after the war.

The large meat packers are eyeing the quick-freezing process as a possible avenue for streamlining distribution. The freezing of large quantities of meat for military use has given them experience in that direction.

Another development is a quick frozen cooked meal, a new process making it possible to preserve partly cooked dishes so that they can be re-heated without loss of flavor or appearance and taste like a fresh cooked meal.

The increasing demand for frozen foods will create a market for storage facilities, both wholesale and retail, and will bring about a parallel demand for refrigerated transportation facilities and home freezer units.

Many communities are building frozen food locker plants—a large scale refrigeration and air conditioning system serving a whole community for a few dollars per month.

The number of locker plants had the phenomenal growth of from 250 in 1935 to 4,600 in 1944. The war halted construction of an additional 2,000 plants. The industry estimates that more than 1,000 plants will be built each year during the next few years when the war ends.

There is such a demand for locker space that in March, 1944, 99.75% of the space was rented. This locker plant business is expected to gross $10 to $15 million a year for the air conditioning manufacturer.

Dairy Industry Prospects

Dairy industry is a good prospect. Many thousands of tons of refrigeration are required to keep 30 million gallons of milk per day. More ice cream is eaten in America than in any other country—and refrigeration is used throughout the entire process of manufacture. Steady rise in the consumption of milk, butter, ice cream, cheese, eggs, etc., requires additional capacity which means more refrigeration machinery.

Large increases in food volume, particularly frozen food, together with war needs, have packed refrigerated warehouses and trucks all over the country to capacity and considerable shortage has developed.

Despite the addition of 25 million cubic feet new capacity, shortage is

(Continued on next page)

Let them worry for you!

There's an ALCO Field Engineer near you to assist with your refrigerant control problems.

Each of them is a specialist thoroughly trained and qualified to work with you on the solution of tough problems.

If you are a manufacturer seeking the solution of a control problem on a new product—or a service organization that needs help on a big installation—*let our engineer worry for you.* He'll find the most practical and efficient answer.

He's as close as the nearest city shown above. Just ask us or your jobber for the Alco Engineering Data Sheet, form B-3, on which to state your problem.

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853 KINGSLAND AVE. • ST. LOUIS 5, MO.

Designers and manufacturers of Thermostatic Expansion Valves; Pressure Regulating Valves; Solenoid Valves; Float Valves; Float Switches.

● For walk-in coolers, reach-in boxes, display cases and all "above-freezing" refrigeration jobs . . . AVRGAIRE Control assures:

1 Extremely close regulation of box temperature without irregular short-cycling of the compressor.

2 Selective defrost . . . automatic defrost on each operating cycle when box load is normal . . . only partial defrost when loaded with warm produce and extra cooling capacity is required.

3 Uniform humidity to minimize dehydration and "sliming" losses.

Let us send you the complete story on AVRGAIRE . . . the refrigeration control with a single-type temperature bulb so applied that the bulb is influenced by the average temperature of both coil and air! Write today for Bulletin 2250. *Penn Electric Switch Co., Goshen, Ind.* Export Division: 13 E. 40th Street, New York 16, U. S. A. In Canada: Powerlite Devices, Ltd., Toronto, Ont.

PENN
AUTOMATIC CONTROL
FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSO

'Great Potentialities in Residential'

(Continued from preceding page)

acute in some areas. All perishable food-stuffs must be moved under refrigeration during the entire journey from producer to consumer. Rolling stock has depleted rapidly under wartime heavy traffic.

Large expenditures for rehabilitating present equipment, purchase of new trucks, and addition to warehouse capacity, assure a substantial market for the industry.

Estimated sale of equipment to food industries is expected to be several times more than the prewar volume. A potential market of $100 million is being mentioned in trade circles.

The Residential Market

The near term progress in residential air conditioning will be slow, but the long term presents potentialities greater than in the commercial field. It is a huge market and despite the technical advances in equipment for home use, there are some real and material obstacles that prevent any large scale development for some time.

Major problems are:

(1) Most of the existing homes are not suited for air conditioning.

(2) The installation cost is heavy.

(3) In the Northeast area, where population is centered, hot weather does not last long enough to encourage additional cost for cooling apparatus.

(4) A large number of houses heated with steam or hot water do not easily lend themselves to year-around air conditioning.

Because of the potential demand in this market, this problem will not remain indefinitely unsolved. Plans now underway for new residential construction, especially in high priced houses, provide for central year-around air conditioning.

The trend towards publicly, institutionally, or insurance company financed housing developments and dwelling projects, largely in the form of community centers, indicate increased use of central heating and air conditioning methods.

Admittedly, new building will provide a more fertile field than existing structures. Air conditioning apparatus can be installed more advantageously and at low cost if suitable provision is made in the original plan.

The residential air conditioning boom is most likely to start in the southern and western parts of the country where the need for cooling is greater than heating. Summers are long and intense.

In addition, certain areas are subject to dust storms. Dealers in Dallas, Kansas City, and other communities reported many sales directly resulting from the unprecedented dust storm of 1935.

Comfort at Any Price

In those areas summer comfort at any price would be as welcome as is winter comfort in the Northeast sections. More emphasis is being increasingly placed on the benefits to be derived from year-around installations. Nearly half of the centrally heated homes (7,000,000) have warm-air-systems, which could easily be converted to summer cooling by using the same ductwork.

A better quality of postwar air conditioning—a more packaged product, assembled in the factory, carefully engineered and inspected may lead the way. Several of the manufacturers have developed a unit which is economical and serves year-around purposes.

Notwithstanding these basic handicaps, residential air conditioning has been growing. Edison Electric Institute data showed some 22,000 homes air conditioned as of Jan. 1, 1942. Room cooler sales were sharply increasing before the war, as shown below:

Year	Number Sold
1936	5,000
1937	10,000
1938	10,125
1939	20,000
1940	23,000
1941	30,750

Chrysler Corp.'s Airtemp Division, in its survey of postwar outlook for residential market, concluded:

"In the *fifth* year after the war end, air conditioning industry will sell 197,840 residential cooling units at a value of $84 million."

Estimated Annual Postwar Sales	
First year	$36 million
Second year	$48 million
Third year	$59 million
Fourth year	$71 million
Fifth year	$84 million

The market for air conditioning apparatus in homes is estimated as including a possible three million residences (in cities and towns) valued at $10,000 or more each—a 20% saturation would mean 600,000 residences and these may be equipped within the next 10 years.

It is believed that 20,000 additional new homes per year may be considered as good prospects. In addition, 6,000 families renting individual apartments may be included in this market.

As the market is large, competition will be keener. Joint promotional activities of the manufacturers would aid the development. For existing homes and apartments, room conditioners will be in greatest demand.

As to new homes, builders are displaying a growing interest in factory engineered, packaged type, year-around central plant equipment that will serve every room. A modest market is anticipated for such equipment in the early postwar years, increasingly as lowered first costs and operating costs enhance its attractiveness.

Organization of the Industry

Air conditioning as an industry may be divided into three main components:

(1) Manufacturing
(2) Equipment
(3) Markets.

The industry is dominated by companies drawn into the air conditioning field from the following groups:

(a) Refrigerating machinery manufacturers, such as York, Worthington Pump, and Frick.

(b) New concerns organized primarily to produce air conditioning and related equipment, such as Carrier.

(c) Electrical appliance, and automotive manufacturers and distributors, such as General Electric, Westinghouse, Nash-Kelvinator, Chrysler, and General Motors.

(d) Heating and ventilating equipment makers such as Holland Furnace, American Radiator & Standard Sanitary, and B. F. Sturtevant & Co. (now a Westinghouse subsidiary).

In addition, there are numerous small concerns manufacturing accessories and parts such as fans, blowers, coils, filters, humidifiers, coolers, etc., which are either merchandised as separate units or are sold to the large manufacturers of air conditioning equipment.

Past experience of the manufacturers has a pronounced influence on the types of products made as well as on selling methods. Concerns whose chief interest and experience were in refrigeration appear best able to capitalize on the industrial and commercial market, for usually it involves refrigerating machinery.

In the residential and small-unit field, manufacturers with heating and appliance experience hold an advantage.

Air conditioning equipment may be classified into three general types:

(a) Self-contained, factory built, "within the space" units, popularly known as room coolers.

(b) Self-contained, factory built, central plant units, called unitary systems.

(c) Custom built, central plant units, known as central station systems.

The greatest stride toward the solution of basic technical problems seems already to have been taken. The big problem now facing the industry is to bring prices and operating costs down into ranges that will encourage wider use.

Some of the benefits from large scale manufacturing have already been realized. Several components—fans, coils, compressors, etc.—are already mass produced. Labor costs account for 30% of the factory price. Consumers will benefit in lower costs of operation through improved and more efficient designs.

Growth Factors

1. WAR STIMULUS

The air conditioning industry was just beginning to hit its full stride when the war started. During the war years, while civilian use of air conditioning has been restricted, a vast expansion in the field for war uses has been going on.

Development on a large scale was necessary for the manufacture of war materials, such as bomb sights, range finders, shells, etc.; for use on battleships, in stratosphere flying, in

(Continued on next page)

"FREON-22" keeps aluminum cold...
Kold-Hold Industrial Sub-zero Aluminum Sheet Cooler installed in Aluminum Cooking Utensil Co. plant.

Heat-treating sheets of aluminum anneals the metal . . . makes it more workable.

But because aluminum alloys—particularly 17S-T and 24S-T—harden quickly at room temperature, the sheets are stored in sub-zero coolers refrigerated with "Freon-22." This makes bending and forming easier and quicker, and results in a better job.

At the New Kensington, Pa., plant of Aluminum Cooking Utensil Co., a subsidiary of The Aluminum Company of America, this job is done by coolers designed and installed by the Kold-Hold Mfg. Co., of Lansing, Mich. They have a capacity of 700 lbs. of heat-treated aluminum sheets used for airplane cowls. Temperature within the coolers can be lowered from plus 80°F. to minus 20°F. in an hour's time.

"Freon-22" is used exclusively as the cooling agent in these Hi-Low Cabinets, as they are named. "Freon" refrigerants are safe, non-flammable, non-toxic and non-explosive.

Today, refrigeration engineers are using "Freon-22" for hundreds of low-temperature jobs, from freezing foods at –10° or –20°F. to the stratospheric temperatures of –100° to –150°F. used in testing airplane equipment. Keeping pace with progress, many of these engineers are designing their post-war low-temperature equipment around "Freon-22". Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington, Del.

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Increased production facilities NOW enable us to offer "Freon-22" in any quantity for experimental purposes or full-scale operations.

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FREON *safe refrigerants*
REG. U. S. PAT. OFF.
"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

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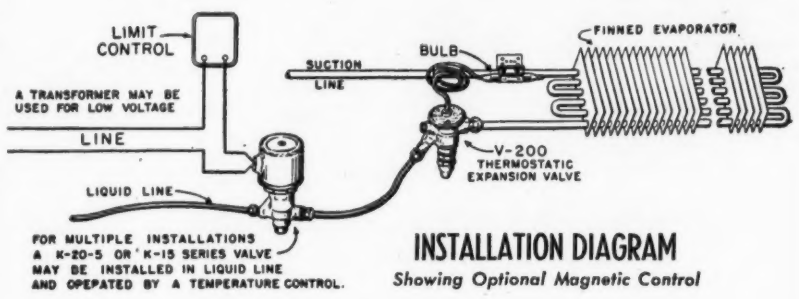
K-20-5 MAGNETIC VALVES

For Efficient Refrigeration

General Controls K-20-5 Magnetic Valve provides magnetic liquid or suction stops for Freon, Methyl Chloride and Sulphur Dioxide. It is a direct acting, single seated needle valve of simple, practical design, constructed of finest materials available. It is especially recommended for "fractional" tonnage installations, where constant tight shut-off is necessary.


LIMIT CONTROL
A TRANSFORMER MAY BE USED FOR LOW VOLTAGE
LINE
LIQUID LINE
SUCTION LINE
BULB
FINNED EVAPORATOR
V-200 THERMOSTATIC EXPANSION VALVE
FOR MULTIPLE INSTALLATIONS A K-20-5 OR K-15 SERIES VALVE MAY BE INSTALLED IN LIQUID LINE AND OPERATED BY A TEMPERATURE CONTROL.

INSTALLATION DIAGRAM
Showing Optional Magnetic Control

K-20-5 operates at high pressure, insuring positive control. Coils can be removed while valve is under pressure. Available for A. C. or D. C., any voltage. Maximum operating fluid temperature 240° F.

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GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.

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Desire for Profits Creates Chief Demand

(Continued from preceding page)

tropical military establishments, and in experimental work and research laboratories.

Air conditioning has been utilized as never before in the storage, preservation, treatment, and preparation of material, and in the assembling and testing of finished products. War plants which were completely blacked-out against possible air raids had to be air conditioned.

The demands that war exacted from the industry, especially the attaining of low temperatures, put its technical skill to the greatest test. The impetus of war and the inventions that have grown out of the war effort necessarily have advanced the science of air conditioning by many years.

2. PUBLIC ACCEPTANCE

Each new air conditioning installation has exposed more and more people to the comfort and health benefits afforded; and has contributed to the profits of the concern which had made the installation for competitive reasons. Air conditioned theaters and movie houses have made the public air condition minded.

Another industry which has aided in popularizing air conditioning is the railroads. The degree of public approval received by the roads in their air conditioning venture is best proved by the increasing use of such equipment. As far as railroads are concerned, it is a necessity.

In educating the public to the increased use of air conditioning, the cooperation of various interests is of value. Outstanding among the national societies have been the American Gas Association, American Society of Heating & Ventilating Engineers, American Society of Refrigerating Engineers, Copper & Brass Research Association, Edison Electric Institute, and Electrical Testing Laboratories.

Some of the leading organizations doing research work on air conditioning problems have been the Mellon Institute for Industrial Research, Pittsburgh; the U. S. Bureau of Standards, Washington, D. C.; and the University of Illinois, Urbana, Ill.

Public utilities are in a strategic position to promote this field. It offers great possibilities for electric, gas, and water load building. Utilities are particularly interested at this period in building air conditioning load to fill the gap that will be created by the dispersal of the industrial war load.

Nearly 77% of utility companies are actively engaged in its promotion. In 10 years, 1931-1941, air conditioning loads increased from 162,000 hp. to 1,196,000 hp., or 740%.

When fully developed, it is estimated to produce $3 to $5 million in utility revenues.

The industry has not always relied on others to do its promotional work. Most of the leading companies have been extensively publicizing developments, and the increased benefits that might be derived by users.

The first trade show, held in 1930, proved so successful that the industry continued annual exhibits until 1941, when they were temporarily discontinued owing to wartime conditions.

Probably few industries have the advantages and benefits of outside help for promotional and research activities that air conditioning enjoys.

Retail merchants have tried their best for years, by means of special sales and markdowns, to overcome the summer slump caused by excessive heat and humidity, but with only minor success. Now, in air conditioned stores, people can shop the year around.

Beginning with large department stores, the advantages of air conditioning have been so rapidly appreciated that its use has already extended into other retail establishments.

A characteristic of sales in air conditioning is that they are *self-expanding—one sale leading to another through direct competition* between establishments. The store or restaurant whose nearby competitor attracts with conditioned air is still the best prospect.

If, for example, a cafe's annual sales of $300,000 could be expected to increase 10% by providing conditioned air, a capital expenditure of $8,000 to $10,000 for an installation would appear justified.

Conversely, if this cafe lost 10% of its customers to an air conditioned competitor, the addition of similar equipment would be almost compulsory. Air conditioning represents the difference between profitable and unprofitable operations during summer months for countless diversified enterprises.

It has long been recognized that the chief demand for air conditioning equipment is still the competitive need of commercial and industrial enterprises — in other words — the profit motive. With air conditioning thus put on a sound profit basis, the demand for it has been increasing rapidly.

Another important bearing on the future of air conditioning is that it sells its products in a large degree to growth markets such as the food, synthetic products, and chemical industries; retail trade, and commercial buildings.

RENTAL POSSIBILITIES

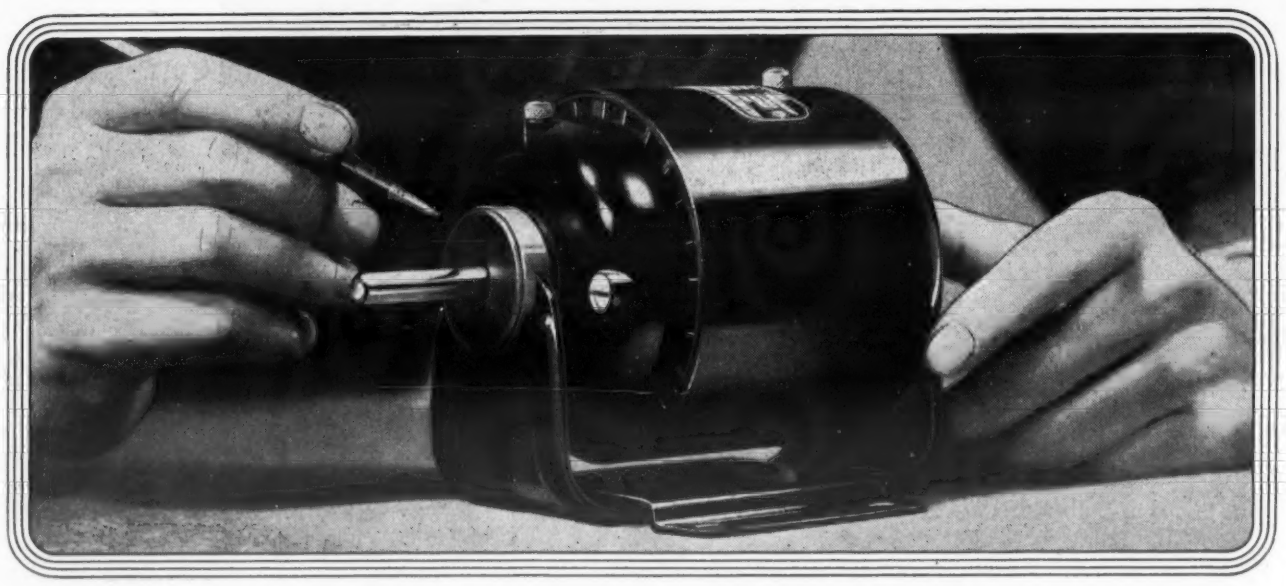
A new market for air conditioning lies in making available for renting and living space otherwise wasted. It now makes it possible to rent space in many buildings placed in noisy, over-heated or dusty locations, and in hot climates; it removes the disadvantages of basement spaces; it is becoming of value to ships for below deck ventilation.

In many industries, proper air conditioning has a direct effect upon the manufacturing operation. Among these are textile and rayon mills, printing establishments, match factories, tobacco factories, and others wherein the product is a hygroscopic material.

The food industry has provided one of the greatest stimuli to the wider application of air conditioning. Refrigeration or air conditioning, or both, are required for processing and preserving 70% (by weight) of the

(Concluded on next page)

Products of EXPERIENCE



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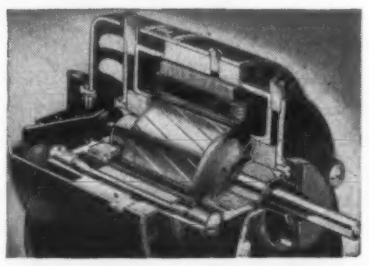

FROM THE JOBBER'S EXPERIENCE

Mr. V. V. VANDERHEI of Fred C. Kramer Co., Chicago, says

"SELLING DAVISON'S SILICA GEL GIVES ME A FEELING OF SECURITY"

"In these days, the refrigeration industry is too vital to the national welfare to take chances with drying agents. Our customers rely on Davison's Silica Gel because they know it goes the whole way on any job. No matter how difficult a job may be, the many 'action-plus-freedom' advantages of Davison's Silica Gel give both our customers and us a feeling of security that is hard to define."

GIVES YOU—1. Maximum capacity for moisture prevents freeze-ups . . . is not affected by oil; **2.** Instant action; **3.** Removal of Acids, Corrosive compounds and other impurities; **4.** Freedom from Channelling of Refrigerant; **5.** Safety—will not attack metals or alloys.

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Progress through Chemistry

Canadian exclusive sales agents for DAVISON'S SILICA GEL:
CANADIAN INDUSTRIES LIMITED, General Chemicals Division

Technical Advances Cited as Big Factor Aiding Industry in Future Sales Boom

(Concluded from preceding page)

annual diet of the average American family.

It has revolutionized food processing methods and established a new pattern for food production and distribution. It is employed in food processing plants, warehouses, railroad cars and trucks, terminals, and markets, as well as in the household.

Without refrigeration, great areas devoted to highly specialized crops would not be developed, and the present agricultural picture of the country would be vastly altered.

Acceptance of air conditioning as a necessity for comfortable living is certain to be assisted by the impending change of ideas concerning fundamental requirements of housing. Architectural design is increasingly being planned for the inclusion of air conditioning.

Today, air conditioning is a modern essential for business. Thousands of stores, theaters, restaurants, office buildings, and commercial establishments of all kinds have installed air conditioning.

Their businesses have shown such obvious improvement that thousands more—their competitors—are now planning on new installations. Customers have come to expect air conditioning.

Executives concerned with the success of their business are planning to install a system. They know, also, its beneficial effect on employe health, efficiency, and morale.

3. PROGRESSIVE TRADE ORGANIZATIONS AND RESEARCH PROGRAM

The industry is now well organized and coordinated through trade groups, prominent among which is the Air Conditioning & Refrigeration Machinery Association. These groups have set up standards for operating performance and definitions.

The industry is further aided by municipal and state ordinance and industrial codes covering ventilation, refrigeration, and fire prevention, bearing directly on air conditioning installations. Such regulations impose definite restrictions on choices of type of apparatus and capacities, by establishing minimum requirements.

A significant factor in the growth of the industry has been the amount of money spent on research. In 1938, for instance, some six companies spent over $1,000,000 on research programs. Research activities have proceeded at a quickened pace to meet war requirements and are now turning to peacetime needs.

4. DEVELOPMENT OF NEW AND IMPROVED EQUIPMENT

The development of equipment has reached a point where growth is no longer retarded by major unsolved problems of a technical nature. The greatest strides in recent years have been in the improvement and standardization of design that can meet the needs of a growing diversified market.

The leading manufacturers now have such confidence in their products that they put their resources and reputation back of the equipment by giving actual purchasers a guarantee of free replacement. A market survey of a leading publishing house in 1938 showed that fewer than 10% of users were dissatisfied with the performance of their air conditioning installation. (The principal reasons given were: inefficient equipment, need of more temperature and humidity control, poor automatic control and cooling systems, guarantees not fulfilled, capacity too small, and bad air distribution. These criticisms are being progressively remedied through better design with customers selecting new equipment more intelligently from reputable manufacturers.)

This cannot be considered a discouraging record for a still young industry that suffers from numerous small concerns. Moreover, air conditioning in more than one third of the plants covered by the survey was installed over 15 years ago.

Early apparatus was cumbersome and crude, as were the radio, the automobile, and other household appliances and mechanical equipments.

But progress has been greatly speeded, especially during war years, and if a survey on the performance record of new installations were to be made today, the results would be most gratifying.

No small part of the success of presentday air conditioning is the result of noteworthy progress in the field of refrigerants. Earlier air conditioning used ammonia or sulphur dioxide. The use of these chemicals, however, entailed danger to human life. The development of refrigerants, especially that of "Freon" in 1931, has been an advance of basic importance.

Of only slightly less importance to air conditioning was the discovery of by-passing, which made possible adequate simultaneous control over both the temperature and humidity in the area to be conditioned. By-passing essentially means the mixing of air returned from the conditioned space with the newly conditioned air just taken from the outside, which results not only in a considerable economy in installation and operating costs, but more importantly, avoids temperature and humidity extremes. Patents on the process have expired, making it now available to all.

Further interesting examples of recent technical advance are the evaporative condenser, which reduces by as much as 90% the amount of water consumed, and the new centrifugal compressor capable of assuming varying loads for automatic operation.

The other major stride in air conditioning was the development of compact self-contained units, which opened up a large market in residences, offices, small stores, and individual rooms.

While these small units have not been perfected to meet all the exacting requirements of the consumer, market progress has been made so that they are able to meet the needs of three fourths of the existing market.

Stability of color...

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REFRIGERANT LEAK DETECTOR

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- All porcelain exteriors and interiors. Equipped with patented and exclusive Grad-U-Matic Air Conditioning Systems.

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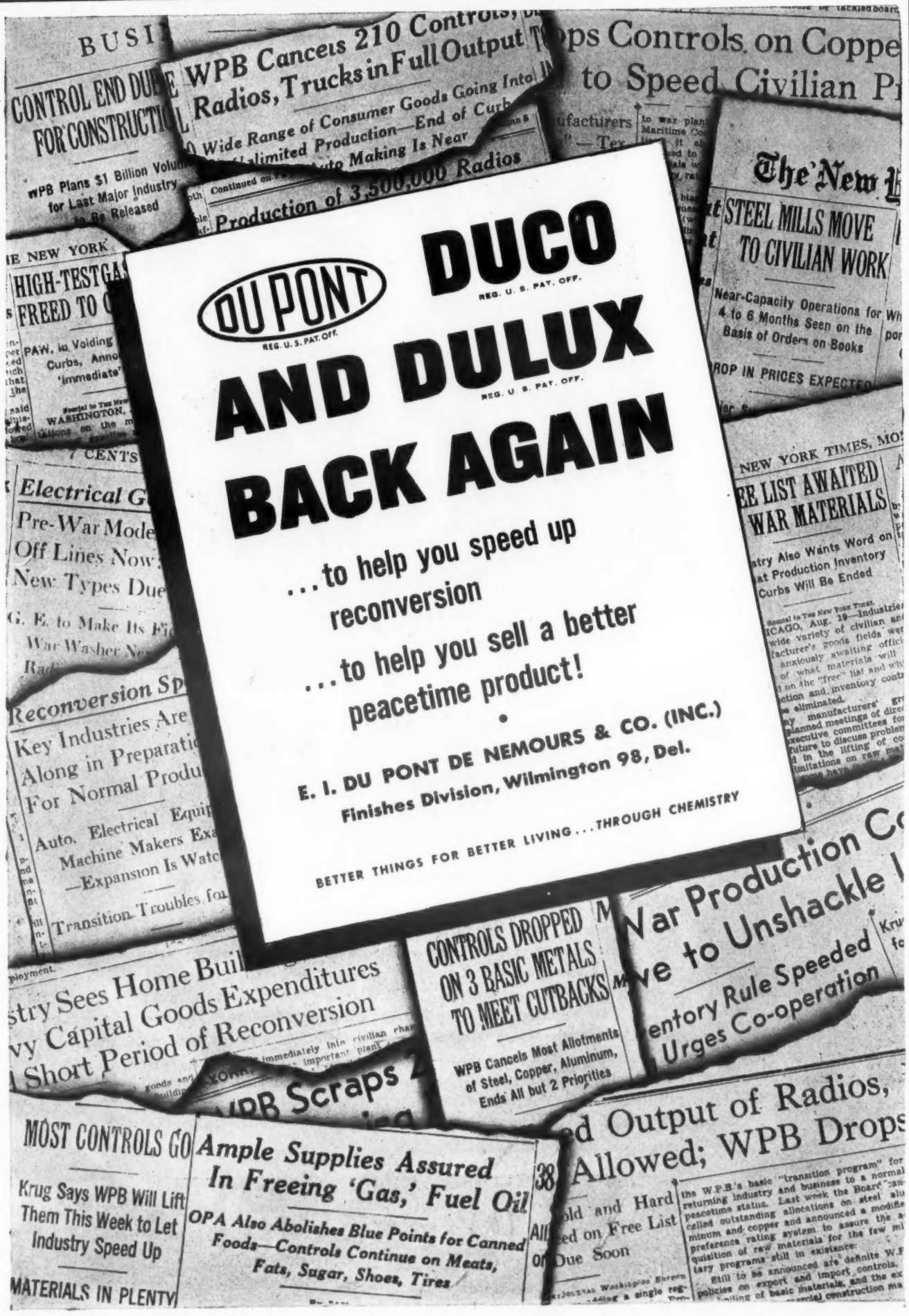
The Polartron System of Frost-Free Refrigeration

They'll Do It Every Time . . . . By Jimmy Hatlo

EVERY SO OFTEN BIGDOME PUTS ON THE ONE-MAN TEAM ACT...
VESSIR - I SENT DIPPLE CO.'S BILL OUT HERE'S THE CARBON.. WHY, SIR?
BECAUSE THERE'S AN ERROR- THAT'S WHY! AND FROM NOW ON NOTHING LEAVES THIS OFFICE TILL I PERSONALLY O.K IT! THAT'S AN ORDER!
COPR. 1945, KING FEATURES SYNDICATE Inc. WORLD RIGHTS RESERVED
BUT OH, BOY- HOW SOON HE CHANGES HIS TUNE-
Thanx to JAS MOONEY. CHICAGO. ILL
WHY DO YOU BOTHER ME WITH THIS ROUTINE STUFF?? AREN'T ANY OF YOU CAPABLE OF DOING ANYTHING ON YOUR OWN? DO I HAVE TO DO EVERY-THING MYSELF?!
JIMMY HATLO
3-20

Buy and Buy - - More War Bonds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CONTROLS DROPPED ON 3 BASIC METALS TO MEET CUTBACKS
WPB Cancels Most Allotments of Steel, Copper, Aluminum, Ends All but 2 Priorities
War Production Curbs Move to Unshackle Industry
Inventory Rule Speeded Urges Co-operation
MOST CONTROLS GO
Krug Says WPB Will Lift Them This Week to Let Industry Speed Up
MATERIALS IN PLENTY
Ample Supplies Assured In Freeing 'Gas,' Fuel Oil
OPA Also Abolishes Blue Points for Canned Foods—Controls Continue on Meats, Fats, Sugar, Shoes, Tires
Output of Radios, Allowed; WPB Drops

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AIR CONDITIONING AND REFRIGERATION News

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What's America's Peacetime Picture in Regard to Production?

AS a direct result of World War I, the United States became a world power, industrially. That was the period which witnessed growth of our chemical and other technical industries.

Now we can expect similar but greater results from World War II, particularly since the U. S. is the only large industrial country which retains its production facilities intact, and which has few rebuilding problems to face.

Europe, Africa, "The Pacific," and Central and South Americas, all will be our potential markets.

And, what is more important, we shall have the production capacity to supply them with practically everything they'll need.

The war-ridden countries will need food, cement, glass, steel girders, and similar more-basic types of materials before any great market for other commodities develops.

Some of these materials will have to be obtained from the United States.

America's first few years will be directed toward resaturation of our domestic market with finished goods and luxury items.

Then, instead of experiencing a slump, markets should develop in the war-torn nations—and thus our prosperity should be extended.

Competition will be encountered from abroad as a result of modernization (thanks to Lend-Lease) of their basic industries—such as coal mining.

The war has emphasized the value of research.

In fact, one large company has been making plans for tripling its research staff in the not-too-distant future.

It is true that considerable research was cut off during the "conflict."

Although it was directed toward military objectives, the results registered by subsidized "pure research" laboratories should find peacetime applications.

Let us include, for example, wartime developments such as synthetic rubbers, plastics, radar, DDT, jet propulsion, rocket projectiles, magnetic mines, midget submarines, spectroscopy, aviation, toluene, triptane, cumene, penicillin, polysilicones, lithium greases, food dehydration, electronic heating, etc.

In the case of *organic chemicals,* it has been estimated that our exports will be able to absorb 10% of the postwar output. Latin America is considered to be an excellent market—the best outlets for these chemicals being Mexico, Brazil, Argentina, Chile, and Peru.

One important factor to be considered is the enormous *depletion of our natural resources* brought about by the ravenous appetite of war. Many of our rich ores have been over-exploited and cannot be replaced.

In fact, it has been estimated that our potential copper, lead, and zinc sources will be exhausted in the next 25 years.

We are paying for our laxity in scrap salvage during the past; and *conservation* will be a theme of growing importance.

Many eyes are now focused on two countries which may eventually surpass us at their zeniths—*Russia* and *Brazil.*

Both are larger than we are, and both have enormous unexplored and undeveloped resources.

While Russia is reconstructing for the next four five-year plans, Brazil will be in the process of the most intensive development in its history.

Much American capital can be expected to go there, and many of our technicians will be learning Portuguese—even in preference to French, German, and Russian!

"WHEN A JOB CALLS FOR MORE THAN ONE EVAPORATOR ON A SINGLE UNIT . . . .

I call for an A-P MODEL 235 Suction Pressure Valve . . . It's a good feeling to know what a Valve can do . . . *and I know!* . . ."

THAT is the comment from a Refrigeration Service Engineer when we asked him regarding his personal experience with "A-P" Valves.

Confidence like this is based on practical, day-in day-out experience in maintaining the nation's refrigerating machinery in spite of today's difficulties and handicaps. It is a trust shared by a widespread army of refrigeration service engineers who know that dependable "A-P" Controls, Valves, and Solenoids save them time-wasting call-backs — insure *customer satisfaction.*

A-P has cracked some hard nuts in the way of refrigeration servicing problems. Always feel free to consult us about yours!

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The complete d-h line includes air conditioning equipment, refrigeration equipment, airplane heaters, water and other liquid coolers, coils . . . each with outstanding qualities that invite comparison. They represent more than a generation of Western development. Into them go thorough knowledge of heat exchange principles . . . expert designing for proper proportion and balance . . . experience in manufacturing quality products with the finest factory facilities.

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Excerpts from Text of Code On Refrigeration in Detroit

Editor's Note: The City of Detroit's new code governing refrigeration and air conditioning practice goes into effect Sept. 27, following a period of six years during which the proposed ordinance was discussed by city safety officials, local contractors, and others interested. The NEWS presents herewith a few typical excerpts from the code.

1.1: No person, firm, or corporation shall install or contract to install, alter, or service any refrigerant containing part of any refrigerating system in the City of Detroit, without first securing a license therefor from the Mayor of the City of Detroit except as herein provided.

No license shall be issued until the applicant has shown to the Board of Examiners by sworn affidavit that he, or it, has been actively engaged in the installation or servicing, or both, of refrigerating systems for a period of at least three (3) years, or has in his regular employ and actively in charge a person who has been previously engaged in the installation or servicing of refrigerating systems for a period of at least three (3) years, provided that credit for one (1) year of actual experience in the installation or servicing of refrigerating systems shall be extended to any applicant who shows on the sworn affidavit graduation in refrigeration from a recognized school of engineering. Also the applicant in the sworn affidavit shall show the refrigerant and types of refrigerating systems with which he has familiarized himself during his actual engagement or education in the installation or servicing, or both, of refrigerating systems.

Should the license given be based on a regular employe having three (3) years experience, the application shall name the employe as well as the employer. Should the employe's services terminate, the license shall be cancelled, provided that a ten (10) day period may be allowed the employer, with approval of the Examining Board, to replace him by a qualified employe. The Department shall be notified when such change takes place and the new employe's name shall be entered on the current application.

Section 7—Public Assembly Occupancies

7.21: A refrigerating system containing more than fifty (50) pounds of a Group (1) refrigerant and which includes air ducts shall be of the Indirect Type, unless it falls within the limits of area to be conditioned as follows:

(a) Up to and including one thousand (1,000) square feet of floor area, fan controls and dampers may be omitted.

(b) Above one thousand (1,000) to five thousand (5,000) square feet of floor area to be conditioned, approved fire dampers shall be provided to cut off the refrigerant containing part of the system from the duct system.

(c) Above five thousand (5,000) square feet of floor area to be conditioned, both fire dampers and fans with controls shall be provided.

These provisions do not limit the requirements of other ordinance provisions.

Fire dampers and fan controls where used or required shall be of the positive self-operating type with manual resets.

Fan and damper controls shall be set to close the damper and stop the fan when the temperature of the air in the duct at the damper location reaches 210° F. where the damper is on the discharge side of a system containing a heating coil and shall operate at 125° F. when the damper is on the suction side of the system, or on the discharge side of a system containing no heating coil.

Section 11 Installation Requirements

11.10: Condensing units located one above the other within the same room shall be provided with adequate and permanent facilities for inspection and service.

11.11: All moving machinery shall be provided with adequate guards in accordance with the American Standard Safety Code for Mechanical Power Transmission Apparatus, A.S.A. B-15-27 with revisions.

11.12: Adequate illumination and space for inspection and servicing of condensing units shall be provided.

11.13: Condensing units with enclosures shall be readily accessible for servicing and inspection.

11.20: All connections made with the public water supply shall be in accordance with the State of Michigan and City of Detroit Plumbing Codes and Regulations.

11.21: Discharge water lines from condensers or other refrigerating equipment shall be in accordance with the State of Michigan and City of Detroit Plumbing Codes and Regulations.

11.30: The installation of all electrical equipment and wiring shall be in accordance with the requirements of the City of Detroit Electrical Code and the latest edition of the National Electrical Code, as approved by the A.S.A.

11.40: The installation of all gas fuel devices and equipment used with refrigerating systems shall be in accordance with the Official Building Code of the City of Detroit.

Section 12—Refrigerant Piping Valves, Fittings & Related Parts

12.10: All materials used in the construction and installation of refrigerating systems shall be suitable for the refrigerant used, and no material shall be used that will deteriorate due to the chemical action of the refrigerant or the oil, or the combination of both.

(Concluded on next page)

In the highly competitive days ahead, depend upon G. E. for the extras that help you build business—

Besides producing the finest air conditioning and refrigerating equipment for you, G. E. offers a lot of little things to make your job simpler. For instance, you have the steady help of consistent trade advertising to tell your story where you want to sell. You're backed up by planned promotion and merchandising, catalogs and instruction manuals full of show-how. The vast resources of a *big* company are at your service for any problem you meet.

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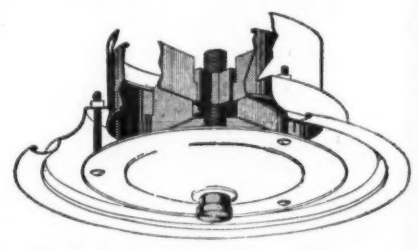

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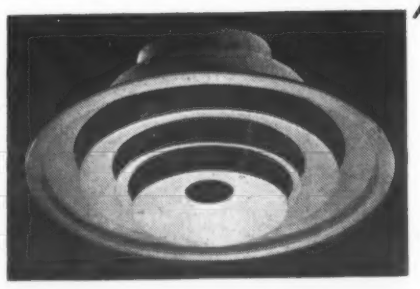

Type SR Adjustable Diffuser for supply and return air

By simply turning the air adjustment screws (easily accessible from under the unit) the inner cone may be raised or lowered to secure any angle of air direction required. A built-in damper, with which either model can be equipped, varies the outlet aperture uniformly without affecting the outlet velocity or diffusion pattern. Thus, the air direction and volume of the same KNO-DRAFT Diffuser can be adjusted to be equally effective in expelling chilled air parallel to the ceiling or ejecting heated air downward to prevent stratification.

With KNO-DRAFT Adjustable Diffusers many engineers have been able to insure efficient air distribution, maxium premixing of room and supply air, noiseless and draftless diffusion and uniform temperature throughout the occupied zone. And they have been able to reduce labor and sheet metal costs by distributing large volumes of air at higher duct velocities in smaller, simplified ducts with fewer outlets, because KNO-DRAFT Diffusers permit the use of higher neck velocities.

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AIR RECOVERY AIR PURIFICATION AIR DIFFUSION

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Detroit Code

(Concluded from preceding page)

12.11: Standard weight steel or wrought iron pipe conforming to A.S.T.M. A-53 may be used for refrigerants requiring field test pressures (Table 3, Section 14) not exceeding 250 pounds per square inch, provided lap welded or seamless pipe shall be used for sizes larger than two (2) inches (I.P.S.). For 1½ inch or smaller, extra strong pipe shall be used for all test pressures except as hereinafter specified. For refrigerants requiring field test pressures (Table 3, Section 14) exceeding 250 pounds, extra strong steel or wrought iron pipe conforming to A.S.T.M. A-53 shall be used.

12.12: Pipe joints may be screwed, flanged or welded. Screwed joints shall conform to A.S.A. Pipe Thread Standard No. B-2-1919. Exposed pipe threads shall be tinned or otherwise coated to prevent corrosion. Flange bolts shall project through nuts.

12.14: Valves, flanges and fittings may be made of cast iron, malleable iron, bronze or steel castings, hot forged, drop forged or fabricated steel, wrought copper, bronze or brass, and shall be of the design and material listed and marked as standard by manufacturers for the particular refrigerant service and approved by the Department, provided that cast iron conforms to A.S.T.M. designation A-126-30 with revisions; Class "B" higher strength gray iron with not less than 30,000 pounds per square inch tensile strength.

12.16: Bushings may be used in fittings when the reduction is two or more pipe sizes. For single pipe size reduction, reducing fittings shall be used.

12.17: Pipe bends shall be substantially circular in section and free from injurious wrinkles, buckles, kinks and creases. This shall not be construed as barring corrugated pipe bends made of suitable material.

12.18: Copper or red brass pipe (I.P.S.) (not less than 80% copper) may be used in place of steel and wrought iron pipe if otherwise complying with Paragraph 12.11 for application.

12.19: On all copper pipe or tube the name or trade mark of the manufacturer and a designation indicating the class or wall thickness shall be permanently marked at intervals not greater than four and one-half feet.

12.20: Hard copper tubing used for refrigerant piping erected on the premises shall conform to A.S.T.M. designation B-88-33, Class "K" or "L".

12.22: Soft annealed copper tubing used for refrigerant piping erected on the premises shall conform for quality to A.S.T.M. specification B-88-33 with revisions, and:

(a) In sizes not greater than ⅝ inch outside diameter shall have a recognized standard wall thickness of .035 inches or greater.

(b) In sizes larger than ⅝ inch outside diameter only ⅝ inch or ¾ inch nominal sizes, class "K" or "L" shall be used.

12.23: Rigid metal enclosures shall be provided for soft annealed copper tubing used for refrigerant piping erected on the premises, except that flexible metal enclosures may be used at bends or terminals if not exceeding six (6) feet in length. No enclosure shall be required for connections between condensing unit and the nearest riser box, provided such connections do not exceed six (6) feet in length.

12.24: Threaded joints on copper or brass pipe of standard pipe size shall be made with extra heavy brass fittings which conform to A.S.T.M. B-62-36.

12.25: Joints on annealed copper tubing not exceeding ¾ inch in outside diameter may be made with flared compression fittings of approved type, provided that all such fittings shall be exposed for visual inspection.

12.26: Joints on hard drawn copper tubing, if of the sweated capillary type, may be made with an alloy having a melting point greater than 1,000° F., or with a solder melting at a point below 500° F., but above 350° F., except as provided in Section 12.28 (b).

12.27: Fittings used in sweated capillary joints shall be cast red brass or die pressed brass or copper, or wrought brass or copper, or extruded brass or copper.

12.28: Where allowed in Institutional and Assembly occupancies, soldered joints in pipe or tubing erected on the premises shall remain mechanically intact when subjected to a pull-apart test equal to a pressure of not less than five hundred (500) pounds per square inch gauge pressure with a temperature of not less than 800° F., except that this requirement shall not apply to soldered joints in pipe or tubing of ¾ inch nominal size or smaller when used in refrigerating systems containing not more than thirty (30) pounds of refrigerant.

(b) In Commercial, Domestic, and Industrial Systems containing more than one hundred-fifty (150) pounds of refrigerant, the soldered joints in pipe and tubing erected on the premises shall remain mechanically intact when subjected to a pull-apart test of three hundred (300) pounds per square inch gauge pressure, at a temperature of eight hundred (800) degrees Fahrenheit.

In Commercial, Domestic, and Industrial Systems containing one hundred-fifty (150) pounds or less, a pull-apart test is not required, but if soldered joints are used, the solder shall not fuse below four hundred (400) nor above five hundred (500) degrees Fahrenheit.

12.29: Any evaporator located in an air duct of an air conditioning system for human comfort shall be constructed to withstand without leakage a temperature of 1,000° F.

12.30: Stop valves shall be in an immediately accessible location for operation.

Stop valves as required on refrigerating systems containing more than five hundred (500) pounds of a group (1) refrigerant or more than fifty (50) pounds of a group (2) or group (3) refrigerant shall be provided with fixed means of operation.

Stop valves shall be installed on all systems containing more than twenty (20) pounds but less than one hundred-fifty (150) pounds of refrigerant at the following locations:

(a) Each inlet and each outlet pipe of each compressor.

(b) Each outlet of each liquid receiver.

In systems containing one hundred (100) pounds or more stop valves shall be placed at the following locations:

(a) Each inlet and each outlet pipe of each compressor.

(b) Each inlet and each outlet pipe of each liquid receiver.

(c) Each liquid and each suction branch header.

Stop valves shall not be placed between a pressure relief device, pressure limiting device, or other protective device controlling pressure and that part of the refrigerating system protected thereby.

12.32: Stop valves used with annealed copper tubing or hard drawn copper tubing ¾ inch nominal size and smaller, shall be securely mounted independent of tubing fastenings or supports.

12.33: Stop valves placed where it is not obvious what they control shall be suitably labelled. Numbers may be used to label the valves provided a legible key to the numbers be located near the valves.

12.40: All piping and tubing shall be adequately and securely supported by means of metal hangers, brackets, straps, clamps or pedestals, in such a manner as to relieve joints of strains and vibration.

12.50: Refrigerant piping or tubing crossing an open space which affords passageway in any building shall not be less than 7½ feet above the floor unless against the ceiling of such space.

12.51: Refrigerant piping or tubing shall not be placed in a hallway, lobby, stairway, elevator or dumb waiter shaft, except that such piping or tubing may pass across a hallway if there be no joints in the section in the hallway and it be contained in a rigid metal pipe. The requirements of this paragraph for rigid metal pipe enclosure or placing of piping or tubing and joints in hallways shall not apply to Section (10), Industrial Occupancies.

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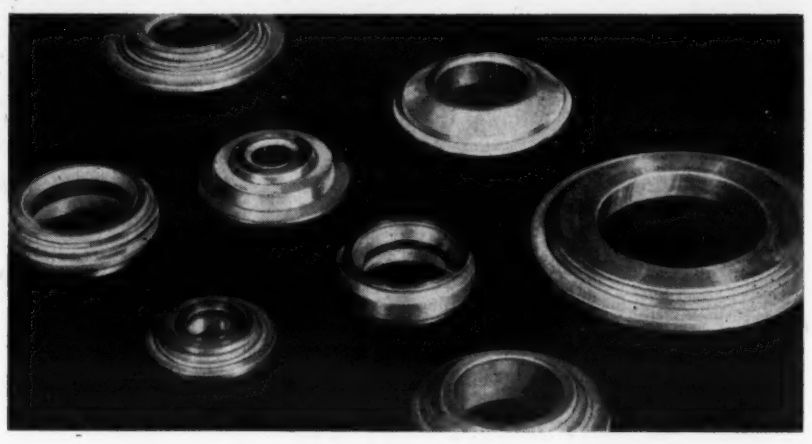
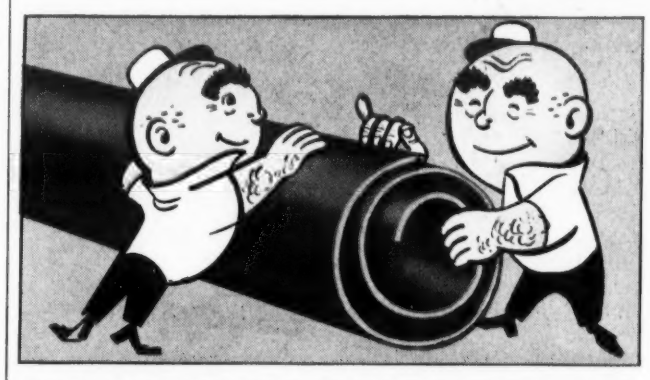
THE MOST SUCCESSFUL SEALS FOR REFRIGERATION AND AIR CONDITIONING EQUIPMENT



Because it will not corrode, seize, score, or pound out even when lubrication fails, SABECO bronze is used by 85% of the refrigerator manufacturers for seals in rotary and reciprocating compressors. It is likewise demonstrating its superiority in the field of air conditioning equipment, where leading manufacturers have recognized that SABECO provides that extra margin of safety and dependability found in no other metal. Made from copper, tin, and lead only, with a maximum of 2/10 of 1% total impurities, SABECO bronze may be the means of prolonging the life and increasing the dependability of your products or equipment. For complete particulars write to Saginaw Bearing Co., 861 S. Water St., Saginaw, Michigan. Cable address "Sabeco".

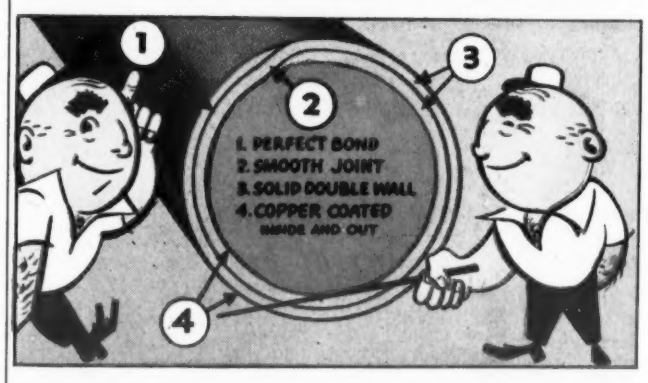
sabeco bronze

BUNDYWELD — THE IDEAL TUBING FOR MODERN PRODUCTS

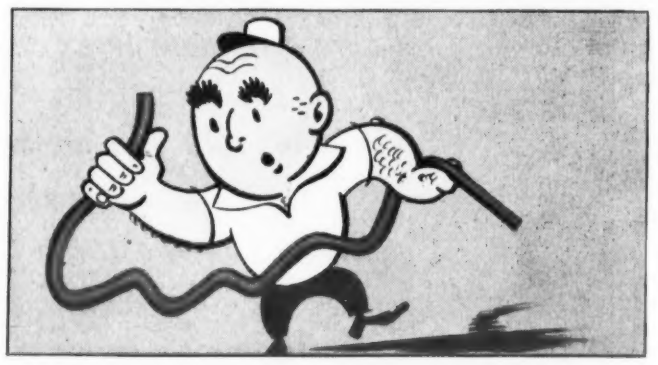


1 Bundyweld Tubing is made from a single strip of copper coated steel continuously rolled twice laterally. This double rolled strip passes through a furnace where the . . .

2 . . . copper coating fuses and alloys with the double steel walls forming a *solid* double wall steel tube, copper brazed throughout 360° of wall contact . . .

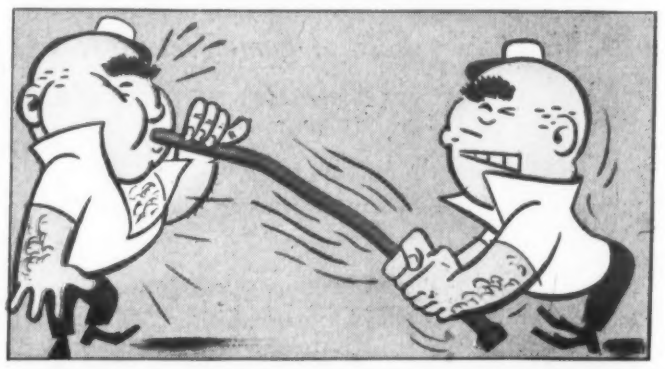


3 . . . and copper coated inside and out. Hard or annealed in standard sizes up to ⅝" O.D. Special sizes cold drawn. Also in Monel. Manufacturers find . . .



4 . . . Bundyweld ideal for modern products. Its easy fabrication gives it great versatility and makes speed and economy on the production line possible. Also . . .

5 . . . its close tolerances, freedom from scale, walls of uniform thickness and concentricity assure quality control of the vital "life lines" for which this tubing is used. Bundyweld's . . .



6 . . . high fatigue and bursting strength provide manufacturers with a dependable product that holds up under stress. Engineers, technicians, production experts accept Bundyweld for its fine performance.

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BEN-HUR FARM & HOME FREEZERS

Ithaca Housewives Tell What They Think About Frozen Foods & Storage Methods

ITHACA, N. Y.—Fifty per cent of families surveyed here recently hope to have home freezers, and 43% are desirous of frozen food storage space in their refrigerators.

These facts and many others relating to householders' attitudes toward frozen foods, food freezers, and conventional refrigerators were brought out in a study conducted by Nancy K. Masterman, research associate with Cornell University's School of Nutrition. The survey was conducted under the direction of Cornell's Research Committee on Food Processing and Storage.

FREEZING FOR YEARS

"For years women have been freezing food in the ice-cube compartment of the automatic refrigerator," said Mrs. Masterman. "The first woman to put a piece of meat into the ice-cube compartment will remain unknown. Perhaps the idea occurred simultaneously in the minds of many women. At any rate it was done. Then with the war came rationing and meat had to be bought when available, ration points used before they expired.

"Commercially frozen foods were point free and incomes swelled to the point at which more families could afford to pay the price for them. Thousands of families brought frozen foods home from community locker plants. They stuffed the evaporator of the refrigerator with it. Shopping habits were changed to fit the times," she said.

Changes in habits of buying and storing food have a bearing on the design of kitchen equipment, large and small. As to the refrigerator, women will continue to freeze food in it. They will use more commercially frozen food if they have a place to store it and if it is less expensive, declared Mrs. Masterman.

Undoubtedly the automatic refrigerator will be called upon to store frozen food in greater quantity and for longer periods than it has in the past. A survey of the refrigerator from the standpoint of frozen food storage was made in an effort to predict its future role in meeting home refrigeration requirements.

Ithaca, N. Y., and its environs provided the main field for the survey. Retail merchants of automatic refrigerators cooperated in giving access to their customer' lists. Questionnaires were mailed to names selected at random. In addition to these, questionnaires were sent to names selected at random from the registration files of a manufacturer of a refrigerator having space for frozen food storage. Questionnaires were also filled by personal interview.

Fourteen makes of refrigerators were in use. These included Crosley, Frigidaire, General Electric, Grunow, Kelvinator, Montgomery Ward, Norge, Philco, Potter, Servel, Sears Roebuck, Stewart Warner, Universal, and Westinghouse.

Forty-eight per cent of the refrigerators were less than five years old. There were only nine refrigerators over 10 years of age, the oldest being 18 years. This probably accounts for the fact that 70% of the families answering the question as to whether they were in the market for a new refrigerator when available (199 families) said they were not in the market.

The oldest refrigerators were in farm homes or in rural non-farm homes. More of the families in the market for new refrigerators were in these groups.

Refrigerators of 6 and 7-cu. ft. capacity were the most common sizes in use (50% of the refrigerators). Eight per cent were under 6 cu. ft., and 32 per cent were 8 cu. ft. Four per cent were over 9 cu. ft.. More of the larger refrigerators were located in city or suburban homes than in rural homes, the survey showed.

Of the families having used frozen food, only two reported not liking it. Nine families disliked a few frozen foods but enjoyed most of them. More frozen food would be used by 90% of the households if they had storage space for it at home. Almost the same per cent would use more of it were it less expensive.

Thirty-six families had refrigerator space for frozen food other than could be had by removal of ice-cube trays. Thirty-five of the families reported on the size of this space; 37% of them had less than ½ cu. ft. and 62% had about 1 cu. ft. of space. Twenty per cent of farm homes had frozen food space, 18% of rural non-farm homes, and 9% of city or city suburb.

AMOUNTS STORED

Less than 5 pounds of frozen food was commonly stored in one day by 59% of the homemakers answering the question, "How much food is stored at one time in the refrigerator?" Twenty-one per cent stored up to 10 pounds of frozen food. Six per cent stored up to 40 pounds; 54% said the space they had was not adequate; only 12% said it was usually sufficient and 33% said it was all they wanted.

The refrigerators with frozen food storage were an excellent supplement for locker storage, declared Mrs. Masterman. A two-weeks' supply of food was usually kept in the compartment, saving trips to the locker. Food producers interested in freezing and storing at home found the compartment too small unless combined with locker services.

One user of this type refrigerator used it for freezing small amounts of fruits and vegetables as they came from the garden. From one to five quarts could be frozen at home and allowed to accumulate until a half bushel or more could be taken down

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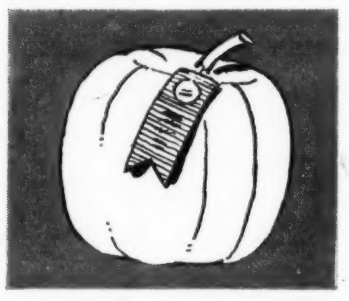

"There will be a lot of home freezers. Many of them will be good products, but there can be only one best —only one that gets the blue ribbon.

"You've all seen the 'punkin' display at the old county fair—the table covered with dozens of big orange beauties. They all looked like winners. But when the judges came around on Friday night only one of them got the first prize.

"There will be a lot of 'punkin judging' in the field of home freezers. We feel we have the right to say, on the basis of facts, that Deepfreeze is the blue-ribbon line... hottest 'cold' proposition in the business today."

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Vice-President and General Manager
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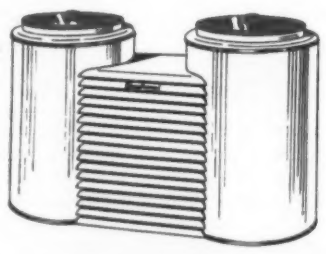

Deepfreeze
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AGENTS FOR KINETIC'S "FREON-11," "FREON-12" AND "FREON-22"

Once-a-Week Shopping Habit May Indicate Need for Considerable Storage Space

(Continued from preceding page)

to the locker at one time for long storage. Quantities of from 10 to 15 quarts were taken to the plant for freezing. Freezing small amounts daily, rather than large quantities at a time was found less tiring and a better product resulted, according to this user, as less time elapsed between garden and freezer.

One hundred and eighty families reported on the source of frozen food they had used. Fifty-one per cent of them had used commercially frozen food only. Twelve per cent had been locker plant patrons. Food had been frozen at home by 7%. Commercially frozen food plus locker-frozen had been used by 2% and 6% had used both commercially frozen and food frozen at home.

Most of the home lockers in use were the ice-cream cabinet type and were considered inadequate. There were only two farm freezers, one of 18 cu. ft. and one of 20-cu. ft. capacity.

50% WANT HOME UNIT

One hundred and ninety-nine families expressed their preference for frozen food storage. Fifty per cent of them hope to have a home unit. Frozen food storage in the refrigerator would please 43%. The remainder had not made up their minds as to what they wanted.

The separate unit for storage was preferred on the farm by 75%, storage in the refrigerator by 20%. In the city and city suburbs, 52% of the families wanted storage in the refrigerator as compared with 39% the separate unit. The separate unit led the rural non-farm demand, 65% preferring it, while 30% would rather have refrigerator storage.

The present ice-cube capacity was considered satisfactory by 70% of the families interested in more frozen food storage space in the refrigerator. Only nine families would like larger capacity for ice-making. Twenty families said the size could be reduced so far as they were concerned. Many families made ice during the summer months only, using the space in the evaporator for frozen food storage as much as possible.

Fifty-four per cent of the homemakers would like to freeze food in the refrigerator, the survey showed. They were more interested in freezing regularly, meat, fish, and game than in freezing fruits and vegetables. The principal interest in freezing the latter was in freezing the small surplus as it came from the garden in quantities for more than one meal.

There was some interest in freezing foods from large quantity recipes such as stews, soups, and the like to make better use of them and to give more variety in the diet. A large number of housewives made a practice of freezing meat in the evaporator or in the tray beneath, saving shopping trips and food spoilage.

The owners of refrigerators with small evaporators or evaporators with fixed shelves complained of the inability to store meat or packages of commercially frozen fruits or vegetables.

Because of their lack of experience with frozen food, the majority of homemakers were unable to say just how much food they would like to freeze at one time or to store at one time in the refrigerator. For the same reason too much dependence cannot be placed on the amounts they suggested, cautioned Mrs. Masterman.

5 LB. MAXIMUM

Eighty-three per cent of those estimating said they would like to freeze up to 5 pounds at once. They were more indefinite as to storage amounts. Forty-one per cent had no idea how much they would want to store at one time. Fifteen families expressed an interest in storing the week's supply of meat, fruits, and vegetables for the family at one time.

Three families would like to store a two week's supply and one, a month's supply. What would constitute a week's supply was not indicated.

Since food storage requirements are closely associated with shopping habits, an attempt was made to learn how often the homemaker expects to shop for food when times are again normal. It would seem that the once-a-week shopping habit formed during the war will carry over into peace-time, for 66% of the women said they would continue to shop once a week.

Eleven per cent will shop twice a week and only 6 per cent expect to shop daily. If frozen food is to be used in any quantity, shopping once a week will require a larger space for storage than most refrigerators now provide.

One hundred and eighty families answered the question, "Estimating $150 as the price of a 6-cu. ft. refrigerator, would you be willing to pay more for one with a zero food compartment? Slighty more? Considerably more?" Fifty-six per cent said they would pay slightly more, 18 per cent would pay considerably more, and 6 per cent would pay no more. The remainder were not prepared to say how much they would pay for this added feature.

Freezing has a slight edge over canning as a preferred method of food preservation, though most families expect to use both methods, according to the survey. They will can or freeze according to the quality of the produce and what they grow.

FOODS TO BE CANNED

The principal foods to be canned are tomatoes, pears, and green beans. Freezing led for all other products. More than twice as many hope to freeze fruit and vegetables as to can them; five times as many families will freeze meats as can it.

A number of the middle-aged women said they would continue to can everything as they knew how to can, had done it all their lives, and

(Concluded on next page)

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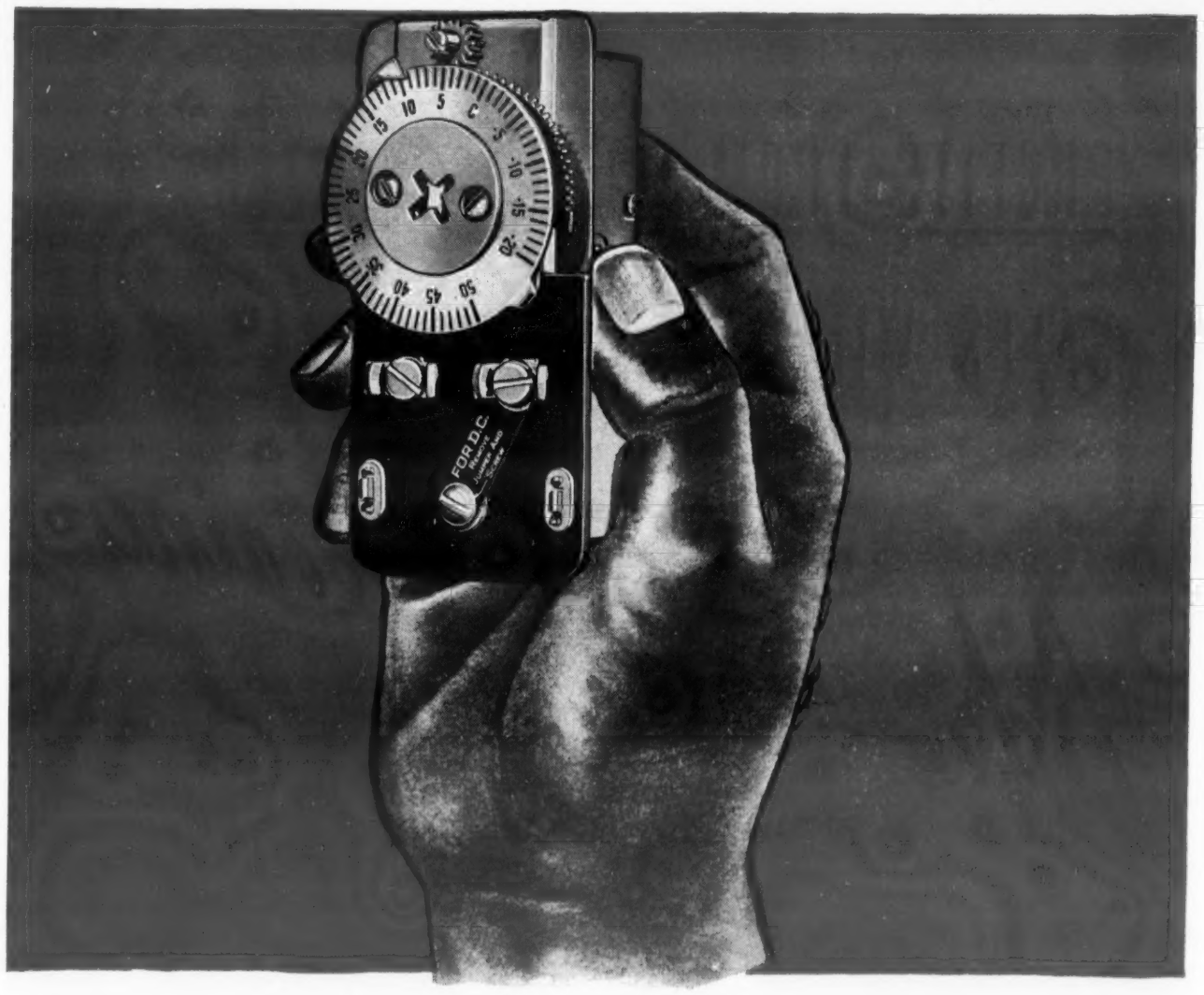

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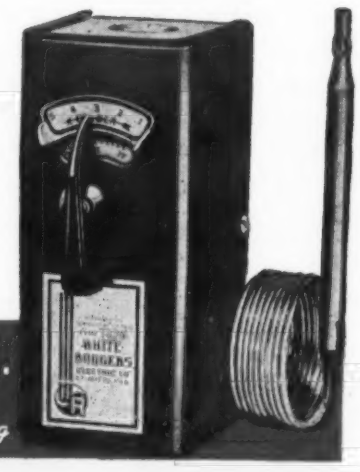
Here's How It Works:

CONTRACTED
At left is a cross-section of the diaphragm and part of the liquid-filled capillary. The liquid has contracted, the diaphragm moving inward, causing the switch to function.

EXPANDED
In view at left, the liquid charge of the capillary has expanded with a rise in temperature. This positive force moves the diaphragm outward and causes the switch to function.



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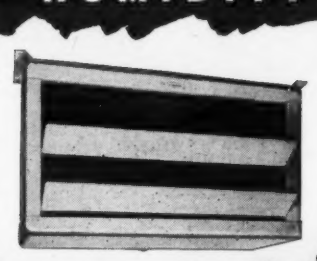
O-KAY COILS are engineered to maintain moisture balance between air and products—to prevent dehydration. Designed and built by men who know your application problems. Write today for information.



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KAY PRODUCTS COMPANY • Division of Tyler Fixture Corp. • NILES, MICHIGAN

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Today America stands victorious; American democracy and sacrifice have quelled the forces of evil.

We at Lenk are proud and grateful to have served our country well—we are proud of our "E," symbol and constant reminder of the fullness and strength that is united America.

★

LENK MFG. COMPANY

Newton Lower Falls, Mass.

Makers of Leak Detectors and Soldering Equipment

Most Common Complaint of Housewives Is That Refrigerator Is Too Small

(Concluded from preceding page)

did not mind doing it. Women with experience in home freezing said they would like to freeze everything and can nothing. They thought they would have to continue to do some canning, however, because of the limitation of low-temperature space.

Thirty-four per cent said they expect to freeze the major portion of the food they produce; 32% will can the major portion; 43% will freeze some of it; and 56% will can some of it. Eleven per cent said they would do no canning and 10% were not interested in freezing.

HOME FREEZER PREFERRED

The home freezer named as the preferred equipment for preservation of the family food supply; 41% of the families producing food hope to have one. Fourteen per cent would like to use the community locker plant; 18% would like a combination of home unit with locker plant processing; 12% were unable to say what their preference would be; and 15% were not interested in any kind of equipment for freezing.

Of the prospective locker patrons, 58% would like extra storage space in a home unit. Storage in the refrigerator would be preferred by 33%, and 2% would like to have both a home unit and low-temperature space in the refrigerator to save steps and frequent opening of the large cabinet.

Only 8% would place the home unit in the kitchen. The basement was given as the proposed location for the unit by 73% of the families. Thirteen per cent had other locations they hope to use, such as utility rooms, attached garage, etc.

The choice of the type of equipment varied with the place of residence. The home unit was preferred by 50% of the families on farms, 54% rural non-farm, and by 34% of the city families.

The locker plant was the choice of 13% of the farmers, 7% of the rural non-farmers and of 16% of the city families. A combination of home storage plus locker plant interested 30% of the farmers, 23% of the rural non-farm, and 14% of the city homemakers.

Although no general questions were asked about refrigerator design, comments were frequently added at the end of the questionnaire or brought up in conversation, explained Mrs. Masterman. The most common complaint was that the refrigerator was too small. These comments ranged from the statement that 6 cu. ft. was none too large for one person to the one than 6 cu. ft. would barely serve three persons.

Flexibility of inner arrangement was prized. Though gadgets were at first enjoyed, on use they often proved an irritating factor in the use of the refrigerator, especially if inner space was sacrificed by their inclusion. Adjustable shelf arrangement, with the possibility of removing a half shelf was considered desirable. The housewife had rather plan her own organization of food in the box than have a plan fixed in the design.

More space for milk and beverage bottles was a frequently expressed desire. The location of the evaporator seemed to have a direct relation to this problem. Where the evaporator was located in the center of the refrigerator and not to one side, the complaint was most frequent.

Evaporators with fixed shelves for ice-cube trays were disliked because the homemaker could not use the space for anything else. It was suggested that there might be one fixed in the upper part of the evaporator for freezing if two trays could not be placed side by side. There would then be more flexibility in the use of the space.

Hydrators for vegetables were liked because they kept the products crisp and in good condition, but many complaints were made about hydrators in that they were too shallow to hold any quantity of food and especially large items such as heads of lettuce, cabbage, or melons, said Mrs. Masterman.

A hydrator should be at least 6 inches deep according to homemakers. They should not have glass lids, glass being too hard to clean and breakage frequent. The grooves in which the hydrator slides had caused difficulty in some instances by discoloring the pan and side walls and presenting a cleaning problem.

Where the vegetable container is a drawer, the shelf to which it is attached should be durable enough so that it does not sag under a load, making opening of the drawer difficult or at times impossible.

Meat compartments, if provided, should be large enough to function or else should be omitted. It was suggested that the tray beneath the evaporator be made of metal instead of glass to prevent breakage and make cleaning easier. Glass shelves in the refrigerator were not liked because they presented the same problem.

SUGGESTED IMPROVEMENTS

Convenient ice-cube trays, better facilities for making frozen desserts, improved ice cream holding, butter storage, more control of humidity were mentioned as being desired.

Some homemakers wondered why a refrigerator had to be streamlined. They would like a flat top so food could be placed on it when removing it from the refrigerator instead of on the floor or to eliminate trips to a distant table.

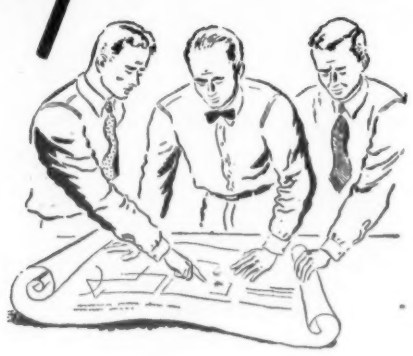
Shelves that draw out to place food in back in easy reach, the latch that could be opened with the elbow or arm when both hands were full, refrigerator space high enough off the floor to eliminate stooping were features suggested as facilitating the removal of food.

A silent mechanism and freedom from repairs were appreciated. Women who are aware of its presence would like a solution to the problem of cleaning the condenser. Others do not know that the condenser is to the refrigerator what the radiator is to the automobile and that dirt and dust interfere with the cooling efficiency and increase running of the motor.

The refrigerator with frozen food storage of 1 to 2 cu. ft. can supply all the space needed by many families, opined Mrs. Masterman.

PROFITS FROM PHILCO FREEZER SALES WILL START WITH

Advanced Engineering



The first requirement to high profits in selling Freezers will be *engineering* . . . the kind that meets the needs of *tomorrow*, as well as today.

Philco dealers will have the full benefit of the traditional Philco *Advanced Engineering*. This will translate itself into a complete line of beautifully styled cabinets . . . with spacious interiors and original features, designed for utmost convenience . . . and with mechanism that is built for many years of trouble-free performance and owner satisfaction.

But Philco will not stop with advanced engineering. Still another powerful force will be utilized to keep dealer profits in high gear: The famed Philco advertising and merchandising methods. National magazines, newspapers, radio programs, store and window displays . . .these will carry the story in the convincing Philco manner that always has meant exceptionally high sales volume in the past.

Add to these factors the widespread public acceptance for any product that bears the Philco name and you have an unbeatable combination for *continuous high profits!*

PHILCO

Famous for Quality the World Over

OPPORTUNITY IN REFRIGERATION

Leading midwest manufacturer of refrigeration condensing units wants to contact a . . . .

Refrigeration Service Engineer thoroughly schooled in all phases of DOMESTIC REFRIGERATION. Must be capable of meeting the public, preparing service manuals and parts lists and handling correspondence. Permanent and attractive for the man who can qualify. In your letter, please outline experience and education; give age, marital status and salary requirements. Address Box 1813, Air Conditioning & Refrigeration News.

Refrigeration Service Men Wanted

Refrigeration service men experienced in repair maintenance, and/or installation of Freon refrigerating and air conditioning systems wanted for immediate, year round employment by one of oldest refrigeration companies in Florida. Location of employment to be at West Palm Beach.

Fall and winter seasonal employment will be considered. Write giving qualifications, full details of education, training, and experience, along with references, and salary or hourly rate expected.

Box Number 1807,
Air Conditioning & Refrigeration News.

Inside Dope

By George F. Taubeneck

(Concluded from Page 1)

Limit Your Call to 5 Minutes

Knowing how difficut it was to get aboard any train during World War II, and how helpful it was to have *bona fide* reservations, we like to quote the newspaper advertisement which advocated curtailed civilian traveling.

Experienced proof-readers being hard to find, this advertisement was not thoroughly checked. Its first line read:

"Is this tripe necessary?"

Original Sin

An indigent, although solvent-appearing, salesman had polished off a fine roast-beef meal. As he applied napkin to mouth with obvious satisfaction, the waiter presented his check.

The salesman gagged, and allowed as how he couldn't pay it.

"Oh, that's all right," replied the waiter (who owned a piece of the joint).

"We'll write your name on the wall, and you can pay the next time you come in."

"Heavens, no, don't do that," exclaimed the diner. "Why, everyone who comes in will see my name up there."

"Don't worry," reassured the waiter. "They won't see your name. Your overcoat will be hanging over it."

Audience Reaction

One of the industry's best-known public speakers was once asked by another frequent banquet entertainer:

"Have you ever noticed how many men in an audience will take peeks at their watches? Doesn't that habit unnerve you?"

"Not," replied the No. 1 exhorter, "until they start shaking them to see if they're still running!"

Convention Aftermath

One of the best convention stories we've ever heard is the one about the cab driver who picked up a quartet of celebrants in front of a midtown hotel in the wee sma' hours 'o the morning.

An exceedingly well-versed (and undoubtedly well-tipped) cab-starter had succeeded in sorting out these well-oiled personnages, and in identifying their respective destinations.

He deposited the first man on the far side of the cab.

"This gentleman goes to the Edgewater Beach," he told the driver.

And, in order, he manhandled the remaining three into position in the back of the cab, giving the home (presumably) address for each.

Not long thereafter the cab driver returned, and asked the starter:

"Mac, would you please sort these stews out again? I caromed over an excavation on Clark St., and now look at 'em."

Page the PN

"My family thinks there's something wrong with me," a woman complained to the psychoanalyst, "simply because I like buckwheat cakes."

"But there's nothing wrong about liking buckwheat cakes," the doctor murmured, puzzled. "I like them myself."

"Oh, do you?" The woman was delighted. "You must come up some day. I have seven trunks full."

At a buffet supper at Harpo Marx's home in Hollywood, guests were inconvenienced to find no napkins, but Oscar Levant 'covered up' for his friend.

"Due to the high cost of living," he announced, "there are no napkins —but from time to time a woolly dog will pass among you."

Odd Man Loses

Don Marquis once allotted himself $200 to lose to cardsharpers on a transatlantic voyage, in order to study their technique.

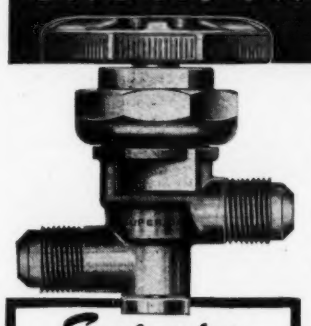
"From the first," he said, "events moved in line with the best traditions. A stranger asked if I would like to join in a game of poker. Names and courtesies being exchanged, five of us made up the school and we played throughout the voyage.

"The first night I won $10. Quite proper; it was part of the technique to let me win a small sum at the beginning. The next night I lost $8. On the third evening I picked up $30, on the fourth $45. On the eve of our arrival in Cherbourg, the two heaviest losers suggested that, as it was our last night together, the stakes should be raised. I expected that. I now had $277 to lose and I would quit when it was gone. My gracious quartet—for they had been delightful company—was ready for the kill.

"We played long past midnight. I finished with $130 to the good, my reserve fund untouched. I couldn't understand it. Would they be laying for me, for a bigger killing, on the return trip to New York?

"No; as I left the ship the next morning, I was startled when a small boy pointed to me and said: 'There he is, Mother. That's the man who got Father's money.'"

CHECK THESE FEATURES



The only diaphragm packless valve with the internal assembly removable as one complete unit . . . a valuable feature when it comes to soldering lines to the valve connections. No need to break the diaphragm seal . . . simply remove the internal assembly *as a unit* . . . solder the connections . . . and replace the assembly. No fuss . . . no bother . . . no special tools . . . and above all, no damage to vital parts. What could be simpler!

But that's not the only important feature of these SUPERIOR DIAPHRAGM PACKLESS VALVES! Pressure responsive cup forms positive pressure-tight seal . . . permitting replacement of the diaphragm with full pressure in the valve . . . or even actual operation of the valve *without the diaphragm* . . . in an emergency.

Rugged, pleasing appearance—ease of operation—generous openings—extra long life—all these are standard features of the valve.

If you haven't a copy of Catalog R2, request one today.

No. 122

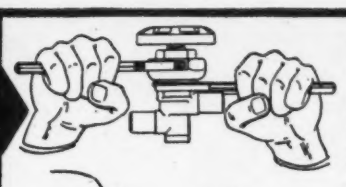


FIGURE 1—Shows wrenches properly applied to main body and auxiliary body for breaking the joint; the first step in disassembling the valve.

FIGURE 2—Observe here the entire internal assembly being removed by hand.

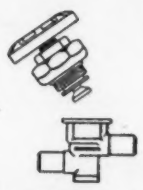


FIGURE 3—The entire internal assembly has been removed from the main body.

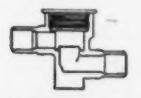


FIGURE 4—The main body, devoid of all internal parts, is now ready for cleaning and fluxing of the sweat tube connections preparatory to soldering.

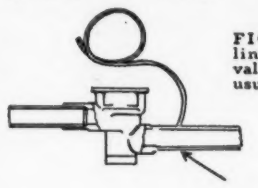
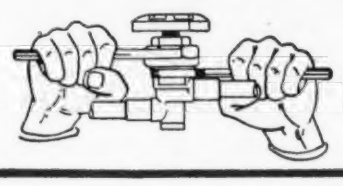


FIGURE 5—Refrigerant lines are soldered to the valve connections in the usual manner. Danger of distorting internal parts is eliminated because all these parts have been removed.



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Locker Plant Suppliers Predict Industry Growth Will Be at Rate of 2,500 Plants Per Year

(Continued from Page 1)

tion, but in all probability will use less than half this much space, it was pointed out. Cleveland hotel accommodations are sufficient to handle upwards of 15,000 conventionites, it was claimed.

E. G. Vail, secretary of the Farm and Home Freezer Manufacturers Association, declared that most of his group would have new models to show within a very short time, and that many of them were planning to exhibit at the Home Furnishing Marts in Chicago in January.

Louis Uhrig, president of the National Frozen Food Locker Association (which is comprised of operators of locker plants), declared that his members might prefer a spring meeting, but would go along with a fall meeting if the conditions were such as to make the holding of a spring meeting difficult.

However, he said he would have to discuss with his directors the question of the advisability of holding a show in conjunction with such a group as that of refrigeration equipment manufacturers.

Officers of the other interested groups will also have to take under advisement the matter of holding such a joint show, they stated, and a decision may be reached within the next few weeks.

1,400 IN PAST YEAR

The assembled suppliers of equipment for the locker plant field were generally highly enthusiastic over the prospects for a continuing growth in installations of locker plants. Jack Gazelle of Carrier Corp.'s Chicago office, president of the group, pointed out that even with the priority restrictions that have existed, some 1,400 new plants went into operation in the last 12 months.

"Our conservative estimate is that new plants will be installed at the rate of 2,500 per year," he declared.

Discussions at the meeting revealed that there is a "replacement factor" in plants which is beginning to make itself felt. Many of the original plants were pretty "primitive" in their construction, and the equipment which they have been using has become obsolete. Some of these can be overhauled and modernized, but in some cases an entirely new plant is being constructed.

The "note of caution" to the generally optimistic spirit was sounded by Perry Phillips, Columbus, Mo. contactor who has built a number of plants. Declaring that "most of our customers are poor country boys—we've got to see to it that they come out all right, one of the reasons being that we often loan them money to get started," Mr. Phillips told his fellow contractors that:

CITY CUSTOMERS TO QUIT?

"Locker plants are going to lose a lot of their city customers. Victory Gardeners will quit as soon as they can get their hand off the hoe.

"City folks are going to buy home freezers, but the locker people say 'that's okay, we'll do the processing,' but will they? Won't every food distributing organization and every butcher be getting into processing too? And if things get real tough, farmers who have freezers may do their own processing also.

"There is a real danger of overbuilding in the smaller communities, so that no one makes any money. I think it's our job to give guidance in the location of plants and to plan the construction so as to provide the most economical operation and permit the man to get his investment out of it quickly."

MORE LOCKERS PER PLANT

Plants are becoming larger in terms of the average number of lockers per plant. Where this figure was only a little over the 300 mark not so long ago, a recent survey of 1,000 plants revealed an average number of 409 lockers per plant, it was reported to the members.

Some present-day trends in locker plant layouts were outlined by Wayne Carver, editorial director for Locker Publications and an operator in his own right. Here's some of the highlights of the trends:

At the "Mother Zero" experimental plant at Cornell university the meat processing and fruit and vegetable processing rooms are built together and partitioned off, this permitting the whole space to be used for one or the other type operation as the demand might call for it.

NEW TRENDS IN DESIGN

Also at the "Mother Zero" plant the operator's office is off to one side of the lobby, glass partitioned, and so arranged that the customers can readily be seen by the manager as they enter.

Poultry processing is becoming an increasingly important part of the locker plant's operation. Small picking and scalding machines are pieces of equipment which must be obtained for this type of work.

One plant which has a blast "tunnel" type of freezer, employs trucks on which larger items designated for freezing are loaded, and then wheeled into the freezer for freezing, later being transported into the locker room on the same vehicle. This plant utilizes a small cabinet freezer for small packages.

Locker plant construction is generally thought of in terms of a one-story building, but Mr. Carver described a Nebraska plant that occupies three floors. Basement and first floor are given over to lockers, processing is on the second floor, and the third floor has aging and curing rooms.

There is elevator service from the basement through to the third floor, and the elevator is fitted with tracks on its roof, which can be connected with tracks on any of the other floors.

NEW SERVICES OFFERED

This plant also has two "plus" features of locker plant service. Facilities are provided for the storage of cured meats, the charges being 25 cents per month per piece, or $10 per year for a bin. A special group of lockers which can be used without entering a cold room is provided at rates somewhat higher than the charges for the regular run of lockers.

Another innovation in locker plant operation is the "serviced" locker room, which can be merely a room fitted with freezer shelves. Space in such a room is rented for so much a month to those who want only "temporary" storage, for game or for occasional buying of quantities of frozen foods.

The term "serviced" means that such a room is entered by plant employes only.

More and more plants, it is pointed out, are adding slaughtering facilities to their services. It was advocated as good practice not to make the slaughter house too large—and this can be avoided by doing slaughtering work on an appointment basis.

(Concluded on next page)

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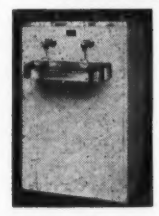
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WIDE-DESIGN LOCKER
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175 W. Jackson Blvd. Chicago 4, Illinois

Standards For Locker Plants Under Debate

(Concluded from preceding page)

Slaughtering facilities create a need for plenty of hot water and also adequate drain facilities.

The location of the processing room has been a matter on which opinion has varied somewhat widely. Consensus seems to be that it should be located where the customer *can't* see the processing going on.

Most plants seem to be planning on a regular frozen food retail department. Obvious place for such a department is in the lobby of the plant, or somewhere near the entrance, and also adjacent to the locker room.

Some plants in the northern parts of the country provide special storage for fox, mink, and other fur farms. Storage space used for such purposes should be completely separate from storage spaces for foods used by people.

QUESTION STANDARDS

The debate on standards for locker plant design, construction, and performance, leading to a decision to appoint committees (to be named soon) for the purpose of studying standards, revolved around some of the "suggested" standards advanced by N.F.F.L.A. members last year. This discussion on standards could be catalogued as follows:

Chill Room Area: Recommended—.6 square feet for each locker. This was criticized as not being enough.

Meat Cutting Room Area:—Recommended—320 square feet of working room space for each 300 lockers. This did not seem to draw any criticism.

Ceiling Height for Meat Rooms: Recommended — 8 feet. However, consensus is that a 9 foot ceiling is more desirable.

Refrigeration Capacity of Freezer Room: Recommended—capacity great enough to handle 3 lbs. of products per locker per day. Generally satisfactory, although it may vary somewhat by areas of the country.

Refrigeration Capacity of Chill Room: Recommended—capacity great enough to handle 5 lbs. of product per locker per day. No general criticism of this standard.

RECOMMENDED T.D.

Temperature Difference Between Coil and Surrounding Air In Locker Room: Recommended — no greater than 15° T.D. Many feel that 15° T.D. is too much, that it will cause harmful effects in the product being frozen. Some held out for a 5° T.D., but the consensus seemed to be that an 8° to 10° figure would be okay.

Relative Humidity in Chill and Age Rooms: Recommended—at least 80% relative humidity in such rooms. This seemed pretty generally agreed upon.

Electric Power Consumption: Recommended—that electric power consumption should not be greater than 50 kwh. per locker per year. Many admitted that there were plenty of plants in operation today that couldn't comply with this requirement.

"If they ever pass a law requiring that 0° F. be maintained in the locker room and power consumption shall not be greater than 50 kwh. per locker per year, half the plants in this country would have to be rebuilt," one authority commented.

There was considerable discussion of the use of forced-draft refrigeration equipment in locker plants, although no specific recommendations have been made for such equipment.

Forced-draft units are widely used in chill and aging rooms, and there are blast-type freezers, of course. But some operators are even using forced air in conjunction with plate-type evaporators, in both locker and freezer rooms.

It was generally agreed that forced-air units speed up freezing time and produce higher refrigeration capacities, but it is also said that costs are increased.

Ceilings Set on Tyler Frozen Food Reach-ins

WASHINGTON, D. C. — Ceiling prices for four frozen food reach-in refrigerators, manufactured by Tyler Fixture Co. of Niles, Mich., have been set up by the Office of Price Administration as follows:

Model	Price to Distributor	Price to Dealer	Price to Consumer
Model HU-18F 18 cu. ft. box	$357	$416.50	$595
Model HU-18D 18 cu. ft. box	357	416.50	595
Model HU-18F box less compressor and valve	267	311.50	445
Model HU-18D box less compressor and valve	267	311.50	445

To these figures may be added a maximum of $6 for crating costs actually incurred by the manufacturer, and, so long as they do not exceed lowest common carrier rates, freight costs paid by the manufacturer.

The net prices established may be diminished, on the other hand, by whatever discounts and allowances each seller extended "to the same class of purchasers on comparative sales of similar commodities" in March, 1942.

The order became effective Aug. 21, 1945.

Frozen Food Outlet Formed in Buffalo

BUFFALO, N. Y. — A business name has been filed here for Deep-freeze-Buffalo, Hoff's Frozen Foods, 118 Ivanhoe St., by Betty Hoeflschweiger.

Wyoming Prison Orders Home Freezing Unit

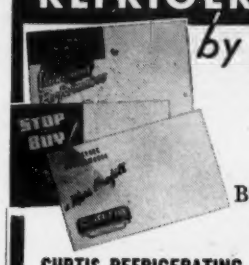
CHEYENNE, Wyo. — A home freezer and cold storage unit has been ordered for the Wyoming state penitentiary at Rawlins, it was announced here by Malcolm LeSueur, secretary of the State Board of Charities and Reform.

At the same time it was disclosed that the board intends to install a large unit at the prison farm at Riverton, when they become available, and place smaller ones in other state institutions.

WFA Revokes Order On Storage Space

WASHINGTON, D. C.—The War Food Administration order No. 116, which controlled allocation of refrigerated storage space and priority of delivery was revoked as of Aug. 28, according to J. B. Hutson, acting Secretary of Agriculture.

REFRIGERATION by CURTIS



Write for complete information.
Bulletins C-14-M, C-58, C-68-C

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of Curtis Manufacturing Company
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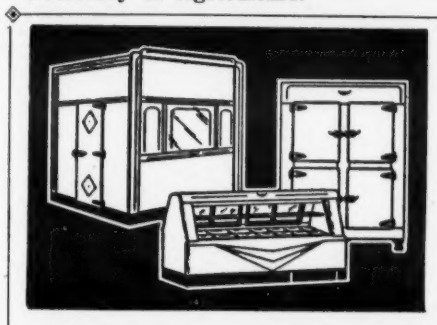
HEAT TRANSFER EQUIPMENT
MARLO COIL COMPANY
SAINT LOUIS, MISSOURI



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INQUIRE NOW ABOUT OUR COMPLETE LINE
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FOGEL REFRIGERATOR COMPANY • Since 1899
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Refrigeration Appliances, Inc.
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There Must Be A Reason

Today over 4,000 of the 7,000 plants are MASTER Locker equipped.

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MASTER FOOD CONSERVATORS

They have everything you want for profitable locker operation. You won't exaggerate when you say "Hats Off To Master," the pioneers of the Locker industry. You won't be sorry if you demand them.

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Remember the right unit is important—so order MASTER today. Better be safe than sorry and safeguard your interests.

Endorsed by and sold through distributors of refrigeration and insulation.

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Member of Frozen Food Locker Manufacturers and Suppliers Association organized for your protection.

Over 700,000 Master Food Conservators in Use

Aeroquip
FLEXIBLE HOSE LINES

DEPENDABILITY PROVEN IN WAR!
Over 5 million hose lines and 1 million self-sealing couplings on U.S. Army and Navy Aircraft

NOW READY FOR ALL INDUSTRY

3 PIECES—EACH REPLACEABLE

1. DETACHABLE and REUSABLE FITTINGS
Fittings can be removed from hose and reused over 100 times.

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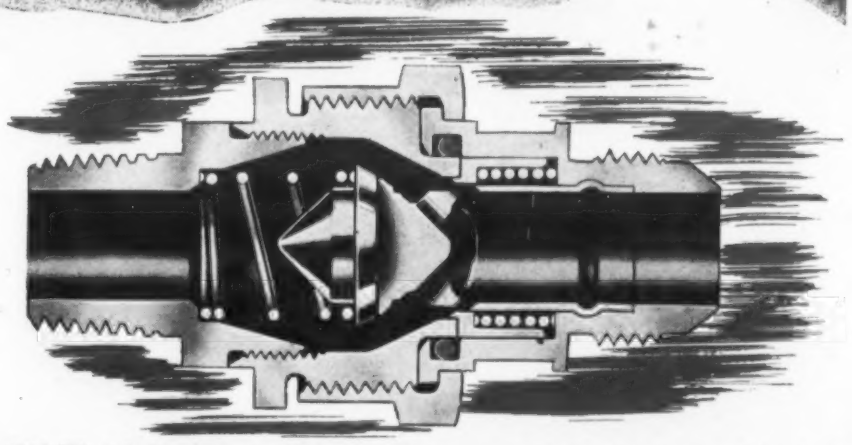
No tightening or adjustment after assembly.

3. UNIVERSAL APPLICATION
Low—medium and high pressure.
Subzero to high temperature.
Oil — fuel — water — air and many other chemicals.



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Army Refrigeration Problems

By P. B. Reed

Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Use & Care of Tools

A good mechanic is known by his tools. Wrenches with spreading jaws, bent screw-drivers, gaping pliers, gauges with cracked glasses, and pointers off zero, all dumped in with fittings, screws, nails, scraps of tubing, and all manner of odds and ends, betray the careless and sloppy workman.

Regardless of how much he may know about the equipment or how much experience he has had, the mechanic is not of much use to the user unless he *does something* in the way of installing or repairing the equipment. There is not much he can do without tools, and the better that the tool is adapted and fitted for the particular use or operation, the better the job the mechanic can do.

Plenty of carefully selected and well designed tools of good quality is a good investment that pays dividends in faster and better work, time saved, and fewer call-backs. Mechanics who try to do almost everything with an adjustable wrench, a pair of combination pliers, and a screw driver, can expect time lost, damaged bolt heads and nuts, and other parts, and busted knuckles.

TOOL KITS

Many service men like to use metal kits with compartmented trays that are removable or that swing outward when the kit top is opened. The larger, less frequently used tools are kept in the bottom of the kit, while smaller, more often used tools and special fittings, screws, etc., are kept in the trays, the separate compartments of which permit segregation of various types and a certain amount of orderliness so that tools or parts can be found when wanted with little lost time. Such kits are sturdy, comparatively light, and are easily cleanable.

TWO KITS ADVISABLE

Many service men whose work consists mainly of service with little installation, prefer to keep their small, more commonly used tools in a small kit that can be easily carried to the equipment. It contains gauges, a gauge manifold perhaps, sets of socket wrenches, end wrenches and box wrenches, two or three screw drivers of assorted sizes, Allen set-screw wrenches, a couple of adjustable wrenches, pliers of the side-cutter, diagonal, long-nose, and combination types, valve stem wrenches, and a few other miscellaneous small tools and special fittings.

Large wrenches, tube benders, cutters and flaring tools, pipe wrenches, hammers, hack-saws, wheel-pullers and other similar large, heavy, or little used tools, are kept in a larger kit.

The following list comprises a rather complete set of refrigeration field installation and service tools exclusive of special tools that may be required for replacement or servicing some particular make of equipment.

Large tool kit with four non-removable trays.

Small kit with one removable tray.

Gauge manifold with one pressure gauge 0-300 PSI, one compound gauge 30 inches to 100 PSI with retard and pointer reset, and two 15 inch flexible tube lines for ¼ inch flared tube connection.

Flexible charging line 15 inch for ¼ inch flared tube connection.

Set of valve stem wrenches, packing gland wrenches with reversible rachet wrench.

Rolling type tube cutter for tubing up to ¾ inch inclusive with three spare cutter wheels.

Rolling type tube cutter for tubing up to 1⅛ inch inclusive with one spare cutter wheel.

Tube bender for ½ inch tubing.

Tube bender for ⅝ inch tubing.

Inside bending spring for ⅜ inch tubing.

Inside bending spring for ½ inch tubing.

Outside bending spring for ⅜ inch tubing.

Outside bending spring for ⅝ inch tubing.

Flaring block with yoke, for tubing to ¾ inch.

Pinch-off block.

Three screw drivers, 5 inch, 8 inch, 12 inch.

Phillips screw driver No. 4.

Offset screw driver.

Two cell flash light with rubber case.

Neon voltage test lamp.

Hacksaw frame adjustable 8 inch to 12 inch.

One-half dozen 12 inch blades, 18 teeth per inch.

One-half dozen 12 inch blades, 24 teeth per inch.

One-half dozen 8 inch blades, 32 teeth per inch.

Pocket thermometer—30° F. to 120° F.

Wheel Puller.

Electric drill with universal chuck for drills up to ¼ inch inclusive.

Socket wrench set ½ inch square drive.

Socket wrench set ⅜ inch square drive.

Set of Allen set screw wrenches.

Set of Easy-Outs Nos. 1 to 5 inclusive.

Side cutter pliers 7 inch.

Diagonal pliers 5 inch.

Long-nose pliers 5 inch.

Combination pliers 6 inch.

Adjustable end wrench 6 inch.

Adjustable end wrench 8 inch.

Adjustable end wrench 12 inch.

Pipe wrench 8 inch.

Pipe wrench 14 inch.

Set of five closed box wrenches ⅜ inch to ⅞ inch inclusive.

Set of five double end wrenches ¼ inch to 1 inch inclusive.

Cold chisel 4 inch.

Cold chisel 6 inch.

Center punch 4 inch.

Pin punch 4 inch.

Gas Halide leak detector outfit.

Cylinder of gas for leak detector.

Ball peen hammer 1 lb.

Ripping hammer.

Forced feed oil can.

Torch outfit for gas cylinder.

Files, flat, five assorted.

Files, round, three assorted.

Files three cornered, three assorted.

Files two square assorted.

Files two half-round, assorted.

Folding 6 foot rule.

Liquid Line sight glass.

Roll friction tape.

Roll rubber tape.

Pocket knife.

Hatchet.

Handsaw, cross-cut.

Sealing compound, for threads.

Sandpaper, 12 assorted sheets from "wet or dry" No. 420 and 320 to Nos. 000 to 2.

Service drums (two) 3 pound for methyl chloride.

Service drums (two) 5 pound for "Freon-12."

Service drums (two) 5 pound for SO_2.

Hand spring suspension scale.

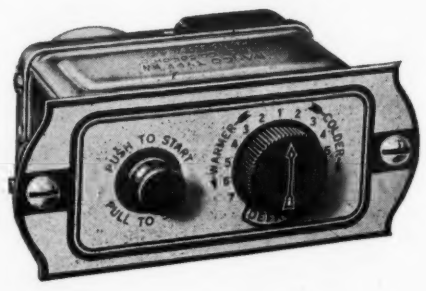
Assortment of flared tube nuts, connection unions, reducers, tees, crosses, etc.

Solder ½ lb. each 50-50 and 95-5.

Flux, 1 oz. each acid and rosin base.

(To Be Continued)

A RANCO CONTROL INSTRUMENT OF ACCURACY



Sturdy Construction with ample protection for delicate parts, helps to make a Ranco Control an instrument of accuracy. Such instruments would not be possible without careful manufacture from highest quality materials followed by precision testing to assure their performance. That is why the Refrigeration Engineer can place his trust in Ranco and assure his customers dependable protection for a long time.

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...when you *Sell Servel**

***Servel's new "Supermetic" condensing units will serve dealers and fixture manufacturers in every vital field**

1. STORE FIXTURES
2. MILK COOLERS
3. HOME LOCKERS
4. BEVERAGE COOLERS
5. VENDING MACHINES
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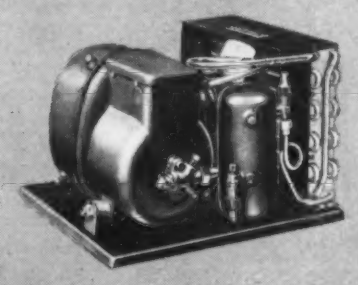


Ever notice how iron filings collect around the poles of a bar magnet, leaving the middle practically bare? Well, a magnaflux machine, based upon this principle, is one of the devices used in the Servel engineering laboratories to reveal any hidden flaws in parts and castings.

The part being tested is magnetized and iron filings exposed to it. If it's flawless, the filings will collect only at the ends, as with a bar magnet. But if there's the slightest crack or crevice in the material, the filings will cluster around it, too, revealing a defect to the inspector.

Actually, of course, the test is more complicated than this. It involves the use of agitated liquids containing the filings in suspension, and numerous technical control methods. But the principle is the same. And the important thing is, it works. It prevents defective parts from being used in the assembly of Servel condensing units . . . and thus insures you against extra service calls and loss of prestige.

Servel materials, parts, and units receive many other similarly revealing tests. So you can be sure that every Servel unit will meet the high standard which Servel has established over the past twenty years.

The new units that Servel will offer you soon will be built to equally exacting standards. Specially engineered to meet post-war requirements, they'll give you a head start in the new markets opening up.

Send a postal today for free advance information on these new units. Ask for the folder on "Servel Supermetic." Address Servel, Inc., Evansville 20, Indiana.

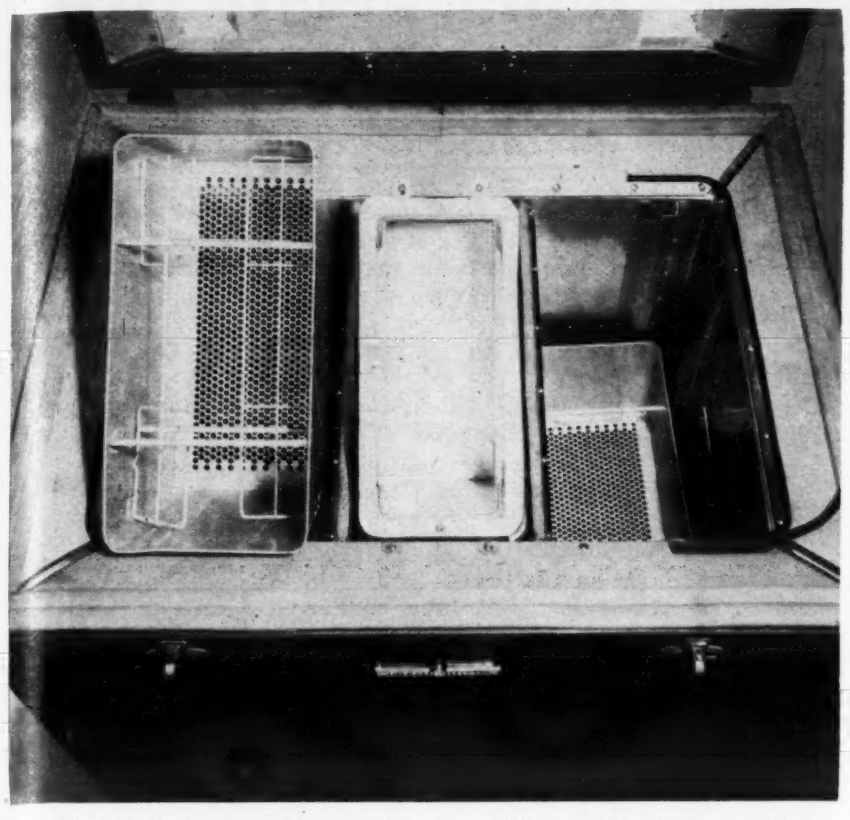
SERVEL, Inc. Electric Refrigeration Division, Evansville 20, Indiana

OPPORTUNITY IN REFRIGERATION

Leading midwest manufacturer of refrigeration condensing units requires the services of a

Refrigeration Service Engineer thoroughly schooled in all phases of COMMERCIAL REFRIGERATION. Must be capable of meeting the public, preparing service manuals and parts lists and handling correspondence. Permanent and attractive for the man who can qualify. In your letter, please outline experience and education; give age, marital status and salary requirements. Address Box 1814, Air Conditioning & Refrigeration News.

Special Two-Temperature Unit Aids Medical Corps



Light enough to be carried by two men, this portable two-temperature refrigerator was developed for the Army Medical Corps by General Electric Co. and the Quartermaster Corps. Center compartment contains a eutectic tank for vaccines held at 15° F. Temperatures below 25° F. can be maintained for an hour when the tank is removed. Rest of the refrigerator can store whole blood at between 35° and 50°.

* * *

Aluminum Refrigerator Weighs 175 Lbs.

CHICAGO—Development of a portable, all-purpose, medical refrigerator for the storage of whole blood, biologicals, and perishable foods and drugs for use of the Army Medical Corps has been announced by Brigadier General J. E. Barzynski, commanding general of the Chicago Quartermaster Depot.

The unit was designed by the Quartermaster Corps in cooperation with General Electric Co.

Made of aluminum throughout, the refrigerator is extremely lightweight, weighing only 175 pounds complete, it is reported. Its outside dimensions are 33 by 24 by 38 inches and it can be readily carried by two men using the handles provided on either side.

Two different temperatures are maintained in two separate compartments of the refrigerator. One compartment contains five removable aluminum baskets which have a net usable capacity of 2½ cu. ft. These baskets may be used for storing 48 bottles of whole blood which must be kept between the limits of 35° and 50° F.

There is also a center compartment which contains a removable tank, used for storing vaccines which will maintain a temperature of about 15° F. This tank has hollow walls filled with a eutectic fluid, permitting the tank to be removed from the refrigerator during defrosting while maintaining an inside temperature of below 25° F. for an hour or more, it is said.

The hold-over feature also permits taking the tank to points some distance away from the refrigerator for the administration of vaccines without danger of their spoiling.

'Reefers' Tested for Frozen Food Shipping

NEW YORK CITY—Tests on the rail transportation of frozen foods recently conducted by the Bureau of Plant Industry, U. S. Department of Agriculture, seem to indicate that lightly insulated refrigerator cars equipped with fan blower units may be satisfactory, it is reported.

Loaded with frozen raspberries, peas, and cherries, eight "reefers" started from Spokane, Wash., on Aug. 16 and arrived in New York City on Aug. 28. All the contents were found to be in good condition, according to six refrigeration experts who accompanied the test shipment.

Four of the refrigerator cars had 6 in. insulation with end ice bunkers in two and top bunkers in two. The other four cars were equipped with 3 in. of insulation and had fans to blow cold air from ice to which 30% had been added.

Railroads now have 4,500 of the fan-equipped "reefers," but only some 450 of the heavily insulated cars, which are much more expensive to build, it is reported. The fan cars maintained temperatures of 18° F., while the heavily insulated cars kept the temperature at 12° F.

Los Angeles Firm Expands

LOS ANGELES — The California Refrigerator Repair Shop, Inc., of 7025 S. Western Ave., here, will build a new two-story frame and stucco store and shop building at 7003-7005 S. Western Ave. It will be 100 x 54 feet in area and will cost $42,000.

Tucker & Thornburgh Win Distributor Promotions

INDIANAPOLIS—Appointment of F. B. Tucker to the position of sales manager and of J. G. Thornburgh as commercial and service manager was announced by the Frigidaire Refrigerating Equipment Co., distributor of Frigidaire products and appliances in this area.

Previous to his appointment as sales manager, Mr. Tucker was service manager for the company during the war. Since joining the firm in 1926, he has held such positions as parts manager, stock comptroller, and district manager of the southwestern district.

Mr. Thornburgh, a member of the company since 1924, was first a Delco-Light district manager and later became sales manager of that department. He then served as Frigidaire district manager for three years and in 1931 became credit manager. During the war, he was associated with the commercial and service engineering departments.

LARKIN COILS

The Watchdog of the Nation's Food Supply

MECHANICAL REFRIGERATION

Larkin Products Include—
Humi-Temp Forced Convection Units—Patented CROSS-FIN-COILS—Bare Tube Coils—Disseminator Pans—Heat Exchangers—Evaporative Condensers—Instantaneous Water Coolers—Zinc Fused Steel Plate Coils—

See Your Jobber or Write Direct:

LARKIN COILS, 519 Memorial Dr., S. E., Atlanta, Ga.

Ask Your Jobber for
HASCOBILT *Parts*
SUCTION *and* DISCHARGE VALVE, DISC, REEDS *and* SPRINGS
for Conventional and Hermetic Type Compressors
HASCO, INC.
GREENSBORO, N. C.
If your jobber can't supply you, send for illustrated catalog and price list.

Henry
Wing Cap Valve . . . TYPE 203
NON-FERROUS ALLOY MEETS GOVERNMENT SPECIFICATIONS
Solder connections machined directly in valve body. Has patented rotating self-aligning stem-disc. Resilient packing. Valve is back-seating, permitting repacking under pressure. Wing cap can be inverted and its socket used to operate valve. Cap sealing on bonnet provides additional protection against leaks. Unrestricted flow.
For Freon and Methyl Chloride
HENRY VALVE CO.
1001-19 N. SPAULDING AVE
CHICAGO, ILLINOIS

By comparison- You'll buy PAR
REFRIGERATION EQUIPMENT
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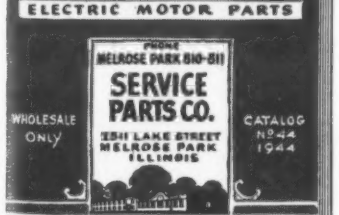

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Electrimatic
AUTOMATIC CONTROL VALVES AND REGULATORS
2100 INDIANA AVENUE · CHICAGO 16, ILL.

THERMOBANK
by KRAMER

With the THERMOBANK a zero degree system is just as automatic as a 40° system.

It defrosts itself without the use of electric heaters, brine spray or water spray.

Actual THERMOBANK installation in Locker Storage Plant of 500 locker capacity.

Write for Bulletin (TV-345N)

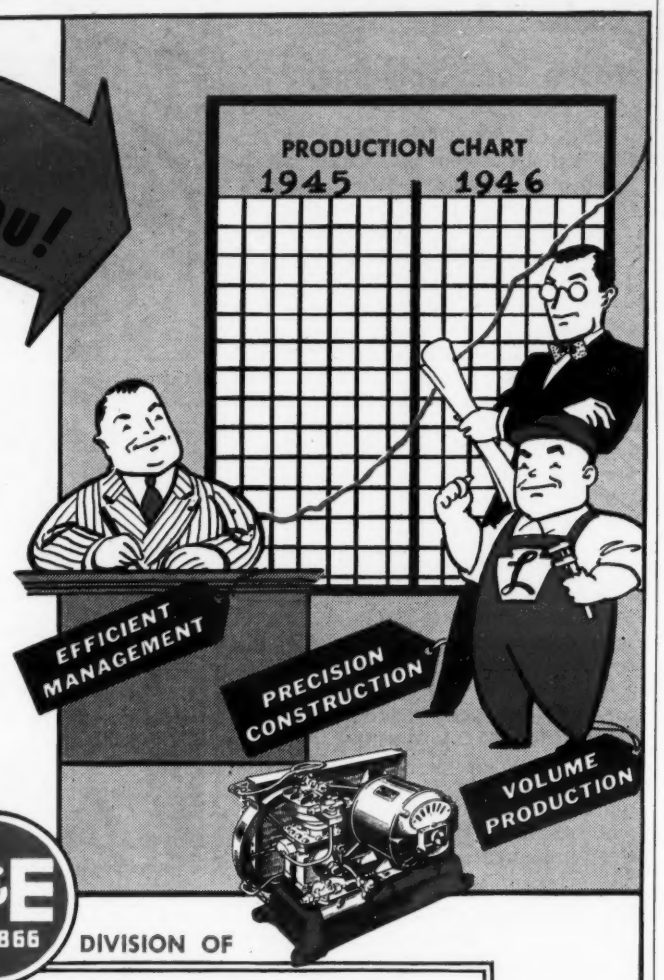
KRAMER TRENTON COMPANY
Trenton, New Jersey

The "Lehigh Team" is just as happy as you!

It's a great feeling, after four years of ordnance production, to be able to set up an honest-to-goodness civilian production chart—and to be able to meet it. True, it represents but a fraction of LEHIGH capacity and doesn't cover all sizes. But it is something! We are getting lots of satisfaction, too, because the rigid standards we have set up are producing real quality and solid value—a compressor on which you can build permanent friends, large volume, and handsome profits.

A Complete Line of
COMMERCIAL COMPRESSORS
1/4-to 5 H. P.

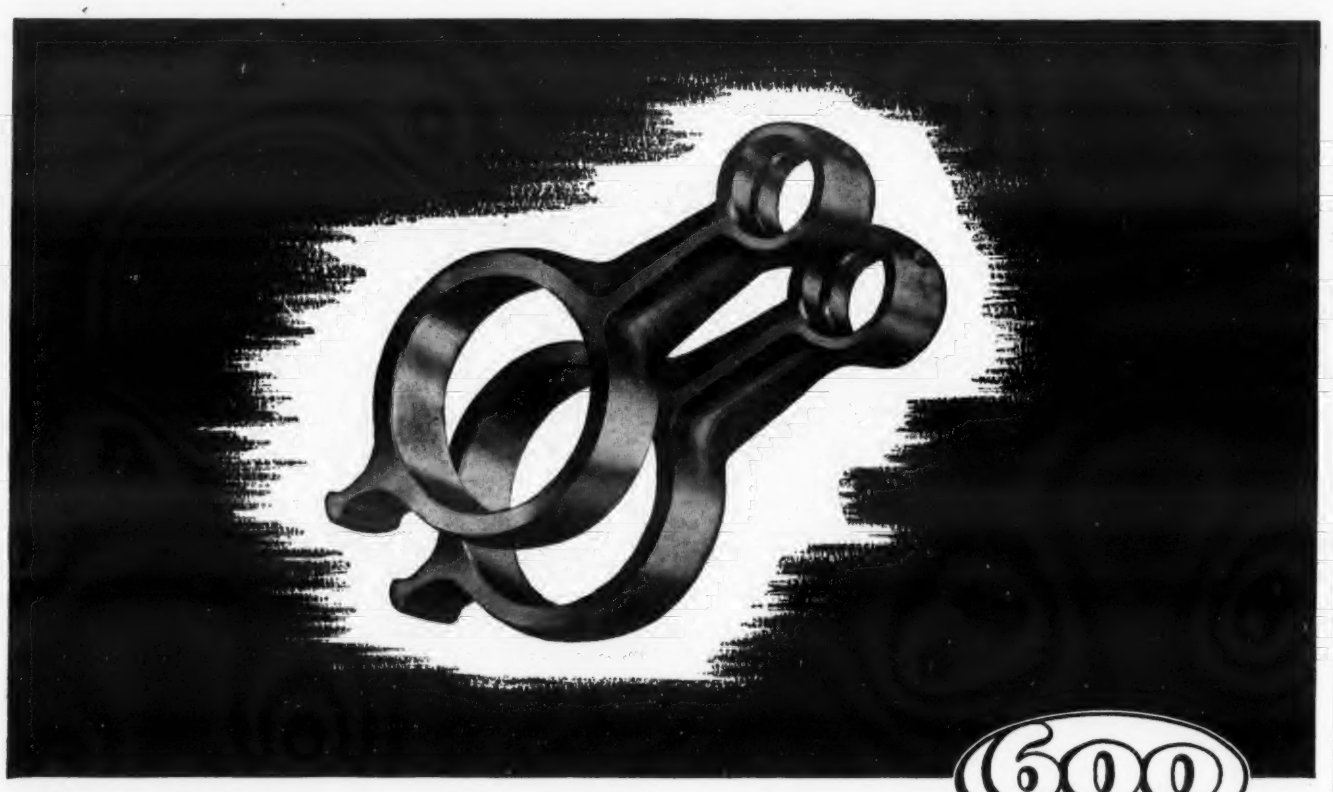
Are you getting our MONTHLY NEWS LETTER? Don't fail to put your name on our mailing list. It will keep you informed on production and delivery.



REFRIGERATION M&E EST. 1866 DIVISION OF

LEHIGH FOUNDRIES, INC.

EASTON, PENNSYLVANIA
Plant: Lancaster, Pa.



ARE YOU USING THE

BEST POSSIBLE ALLOY *for* CONNECTING RODS

Engineers of a large refrigeration manufacturer recently completed exhaustive tests on Forged Connecting Rods made from our "600" Metal, with the following actual results:

After more than 400 operating hours, including several hours at extremely low oil levels, these Connecting Rods showed so little wear that it was exceedingly difficult to tell the Rods which had been subjected to the tests from those which had been machined and polished, but never run. In fact, the difference was not apparent to the naked eye, but could be determined only by laboratory test.

Examination of crank shafts showed no signs of wear whatever, thus substantiating our claim that there is no appreciable abrasive action when mating surfaces are smoothly machined.

"600" Bearing Metal is the solution to many difficult bearing problems. It is for the "hard to crack" applications. It can be drawn or forged, and readily fabricated into a great variety of sizes and shapes. It has been successfully used for many years for:

Gears • Gear Blanks • Bushings • Bearing Pins • Connecting Rods • Worm Gears • Cams • Thrust Washers • Propeller Shafts • Drive Shafts • Super-charger Shafts • Truck Transmissions • Drawn Rods • Extruded Shapes • etc., etc., etc.

"600" Metal is approximately three times stronger than the best cast bearing bronzes, and develops a lower temperature under heavier loads and higher speeds. Extreme pressure lubricants do not corrode it.

"600" Bearing Metal has superlative bearing properties, but contains no tin; thus conserving this critical metal for the war effort.

Write us if you have a bearing problem or require complete information.

MUELLER BRASS CO. PORT HURON, MICH

Servicing Frigidaire Meter-Miser Units

Instalment No. 6

Editor's Note: With this instalment the NEWS concludes the series of articles on servicing of Frigidaire Meter-Miser systems. The articles were prepared with the cooperation of the service department of Frigidaire Division, General Motors Corp.

23—Motor Runs Too Much

Some of the things which can cause this complaint are:

1. Excessive Food Load
2. Restricted Air Circulation Around Condenser
3. Improperly Sealing Door
4. Air in System
5. Moisture in Insulation
6. Cabinet Location
7. Failure of Fan Motor on Forced Air Units

In all so-called motor complaints, always remember that the Meter-Miser is designed to run more than the reciprocating compressors of older refrigerators, but that its higher efficiency and smaller motor make it use less current.

Now, of course, in spite of the fact that most sealed rotary complaints can be corrected right on the job, you will find a unit now and then that has to be replaced.

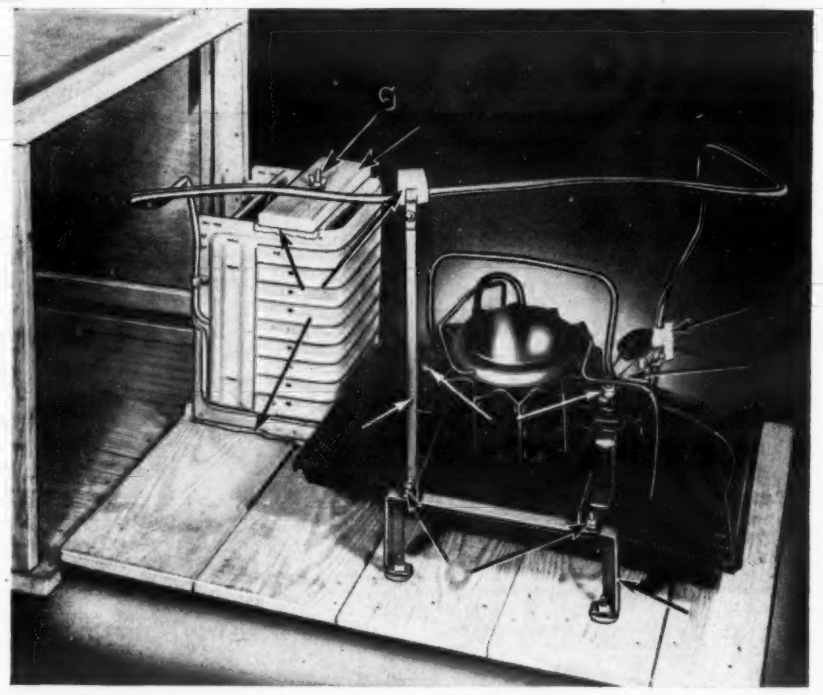
When this occurs there are two types of Frigidaire "out-of-warranty" repair service-features of the two types of repair services, the Replacement Plan and the Repair and Return Plan.

In the Replacement Plan the unit is removed and immediately replaced by another unit which is left in the cabinet.

In the repair and return plan, the unit is removed, sent to the factory or zone shop for repair, returned, and placed in the same cabinet.

1933, 1934, and 1935 models were recently excepted from the repair and return plan.

24—All Units Returned For Repair Should Be Carefully Packed



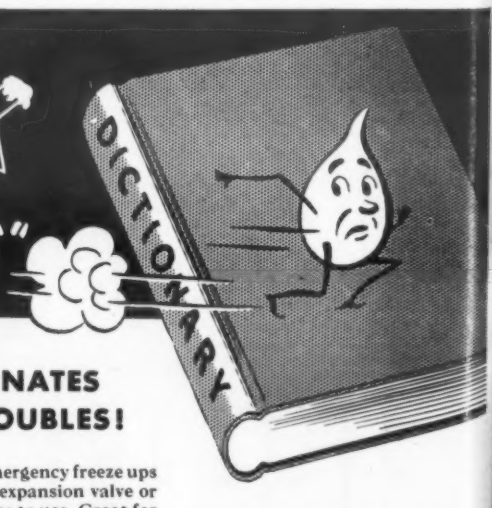
Many units have been received at the factory and zone shops in such bad condition that the cost of repairing them was increased many times. Cooperation is asked in—

(1) The use of all materials furnished for the recrating of inoperative unit, and

(2) The proper tightening of shipping bolts so they will not come loose during shipment.

It's easier to pack the unit right than wrong.

ICE-X MEANS "EXIT ICE"



COMPLETELY ELIMINATES MOISTURE TROUBLES!

ICE-X quickly cures emergency freeze ups when ice forms at the expansion valve or capillary tube. Harmless to use. Great for Freon, Carrene, or Methyl Chloride systems...The dependable liquid anti-freeze.

ORDER FROM YOUR JOBBER OR—

ONE SERVICE MAN TELLS ANOTHER "IT'S GREAT"

EXCLUSIVE NATIONAL DISTRIBUTOR
THE HARRY ALTER CO. 1728 S. MICHIGAN AVE. CHICAGO 16, ILLINOIS
JOBBERS: WRITE FOR SPECIAL PROPOSITION!

Brunner Cites--

(Concluded from Page 1, Column 4)

have been economic developments during the last four years which affect the type and size of units which the company will make.

"Formerly the major portion of our production of condensing units was in smaller sized units. These were absorbed by the ice cream industry, the milk industry, refrigerated display case manufacturers, and others.

"Today the trend is toward the larger units used in cold storage, industrial applications, air conditioning systems, locker plants, farm freezers, and walk-in coolers.

"Bulk of the requirement in the locker plant field is for 3 to 5-hp. units. Cold storage and air conditioning systems demand units ranging from 5 to 30 hp.

"With the increasing demand for these larger sizes, it has been necessary for us to expand our manufacturing operation to enable us to use continuous production line methods in the manufacture of the large units as we have produced the smaller units in the past.

"The manufacture of room coolers in 3, 5, 7½, and 10-hp. sizes will be resumed working in cooperation with another Utica manufacturer and this operation in reality constitutes a new industry for Utica."

Convert to Oil--

(Concluded from Page 1, Column 4)

caused by statements by the Petroleum Administrator to the effect that there would be enough domestic fuel oil available this coming winter to permit householders to keep their thermostats as high as they want all winter. This contrasts with the general note of gloominess and uncertainty on the matter of the coal supply.

In New York City the regional OPA director gave out advices to householders telling them that in making the conversion to oil burning equipment they should pay no more than ceiling prices for service or equipment. Installation contractors may charge no more than their fees as of March, 1942, and their schedules should be on file with local board, these advices said.

The present situation reverses the situation that existed in the 1942-1943 winter.

Hotpoint--

(Concluded from Page 1, Column 4)

company's reconversion program toward completion, with only the automatic dishwasher and garbage disposal not in production as yet. The home freezer, planned for production in mid-1946, is "well along in the early test-model stage," Mr. Slasor said.

That machine will be produced first in a 4-cu. ft. size, designed to hold approximately 165 pounds of foods. The temperature control mechanism will be automatic, with adjustable thermostats to meet use-needs, he added.

The first refrigerator off the line was a Calgloss finished deluxe 7-cu. ft. model with 13.4 square feet of shelf area. Appointments include pop-out ice cube trays, high humidity vegetable compartment with a heavy glass top; a six-way cold storage compartment, and one sliding shelf of rust-resistant wire.

The other model put into production has the same capacity, with standard, rather than deluxe fittings. Both interiors are finished in porcelain over one-piece construction. Hotpoint's Thriftmaster vacuum-sealed unit, equipment on both models, has been improved to increase operating efficiency and increase economy of operation, while reducing its physical appearance, the company said. Both models are 59 in. high, 31 in. wide, and 28½ in. wide including ventilation space and door handle.

Monitor Line--

(Concluded from Page 1, Column 2)

it claimed to be an entirely new principle of hydraulic-aerated washer action which is said to cut washing time.

Monitor's electric steam iron will be made under the Kistner patents, under which Westinghouse and General Electric are also licensees.

The radio set line is featured by a radio-phonograph combination that utilizes a new record-changing mechanism.

Other items include an electric clock with no visible mechanism, and an all-metal carpet sweeper.

T. K. Quinn, president, and P. B. Zimmerman, announced that 60 distributors had been selected, and that distributor franchises are pending in only two localities—Allentown, Pa., and Providence, R. I. Under the Monitor setup, distributors are equal stockholder-director members.

Distributing policy calls for sale of Monitor items only through independent dealers. In each metropolitan center, however, one downtown "quality store," which may be either a department store or a furniture store, will handle the line. Electric utilities will be classed as dealers.

Some distributors are now busy signing up dealers, others are waiting until supply conditions improve.

ASHVE Groups--

(Concluded from Page 1, Column 3)

6, as well as a series of meetings of technical advisory committees.

President C.-E. A. Winslow has called a meeting of the council at the Hotel Statler, Cleveland, at 10 a.m. Oct. 7.

The research laboratory inspection is scheduled for 10 a.m.

In the afternoon a Technical Session will be held in the Pine Room, Hotel Statler, at which three technical papers will be presented, and this will be followed by a social hour sponsored by the Northern Ohio Chapter. At 6:30 a dinner will be served in the Euclid Room of Hotel Statler, and the speaker will be Dr. C.-E. A. Winslow, whose subject is, "The Air-Cooled Human Body."

OPA Ruling--

(Concluded from Page 1, Column 3)

adjustments under the orders as originally issued, states OPA.

In addition to being a producer of one of the products covered by the Sept. 15 supplementary order, an applicant for price relief must also show that both the following exist:

(1) In the last three or more months, his business operations as a whole have been conducted at a loss, or will be so immediately, as a result of recent changes in the industrial picture, and

(2) the existing or prospective loss is for some basic or persisting cause, and is not due to:

(a) Seasonal, non-recurring, or temporary factors affecting operation;

(b) A reduction in volume of production below the normal economic capacity of the plant;

(c) The payment of unlawful wages or excessive salaries or of similar unjustified prices for materials;

(d) The payment of voluntary wage increases under recent Executive Order of Aug. 18, 1945;

(e) Current overhead costs that are abnormally high relative to sales volume, except where these costs can be shown to be unavoidable;

(f) Transactions with affiliated corporations or businesses that are different from transactions resulting from arm's length bargaining or from customary transactions with such businesses;

(g) The setting aside of funds for war reserves or other contingencies.

Seeger-Sunbeam Starts Lines at Evansville

EVANSVILLE, Ind.—Production of refrigerators at the Evansville, Ind., plant of Seeger-Sunbeam Corp. is now underway, annouces Arthur J. Lowell, vice president and local plant manager.

A month earlier production was started at the St. Paul, Minn., plant of the company.

Among the new improvements to be incorporated in manufacturing methods, declared Mr. Lowell, is the chromium plating of cutting tools to lengthen their life. It was indicated that this plating method may also be applied to some refrigerator parts. The company is also experimenting with plating of worn parts.

Are You Getting Your Share of the Milk-Cooling Business?

WILSON

SYSTEMS OF MILK COOLING

A TYPE FOR EVERY REQUIREMENT

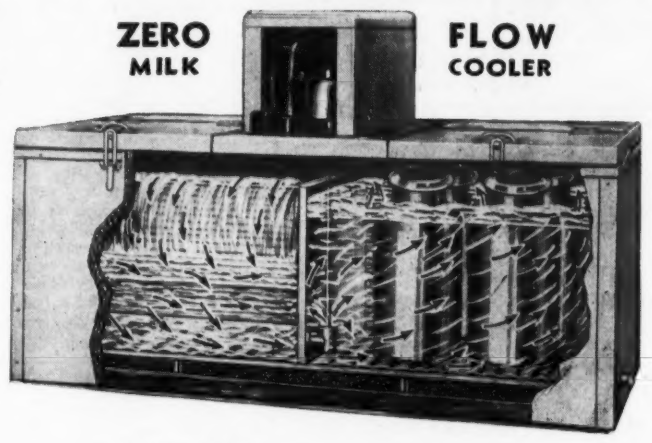
1. ZERO-FLOW MILK COOLER

The Wilson ZERO-FLOW Milk Cooler, in sizes to cool from 4 cans to 20 cans of milk daily, has set a high standard of milk-cooling speed, with economy and dependability throughout a long life. The 1945 ZERO-FLOW, engineered particularly for the use of refrigerating plates, continues the Wilson tradition of high performance in:

- RAPID AND UNIFORM COOLING
- MAXIMUM COOLING EFFICIENCY
- LOW COST OF OPERATION
- LIFE-TESTED CONSTRUCTION

If there is no Wilson Dealer near you . . . if you have an adequate sales-and-service organization . . . you can get your share of this tremendous business. Write NOW.

WILSON REFRIGERATION, INC.
DIVISION WILSON CABINET CO.,
Smyrna, Delaware



Model ZF8-HX50 Packaged-Unit

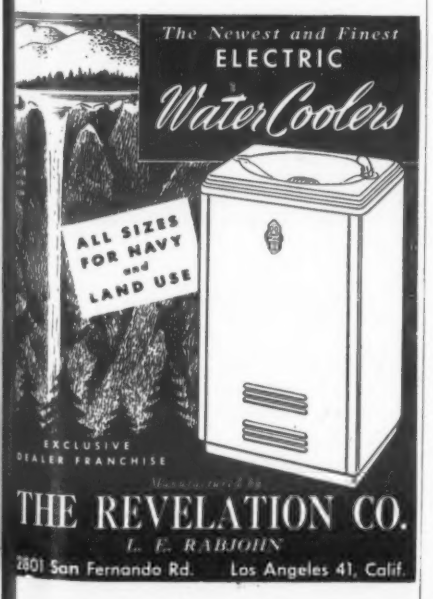
"RECOLD"

WATER DEFROST

'RECOLD' COILS WATER-DEFROST

CANADA PAT. 394,389 U.S. PAT. 2,218,393 NEW ZEALAND PAT. 82,350

REFRIGERATION ENGINEERING Inc.
LOS ANGELES • CALIFORNIA



THE REVELATION CO.
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2801 San Fernando Rd. Los Angeles 41, Calif.

REFRIGERATION
PARTS & SUPPLIES
FOR ALL TYPES • ALL MAKES

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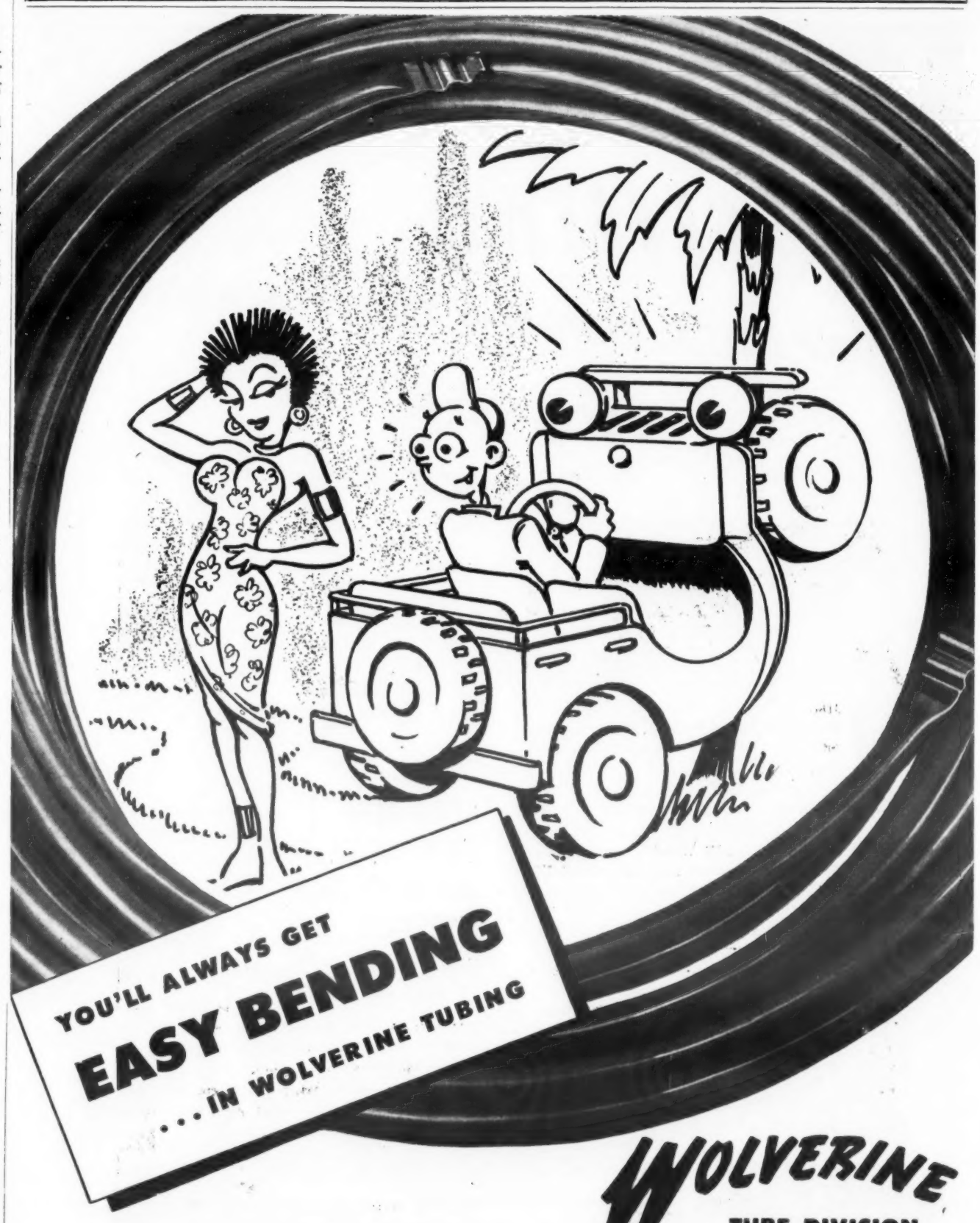
1728 S. Michigan Ave. Chicago, 16, Ill.
Two Big Warehouses to Serve You
134 Lafayette St. New York, 13, N.Y.



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Look for the "LACROSSE" emblem for Assurance of Quality and Performance.
Walk-In, Beer Dispensing and Beverage Coolers
BLUE RIBBON FARM MILK COOLERS
La Crosse Novelty Box Mfg. Co.
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• DISPLAY CASES
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VALVES AND FITTINGS
for Refrigeration
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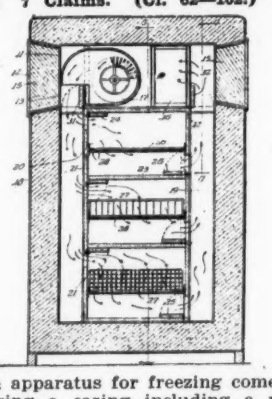
REFRIGERATION PRODUCTS
fedders
BUFFALO, N. Y.

PATENTS

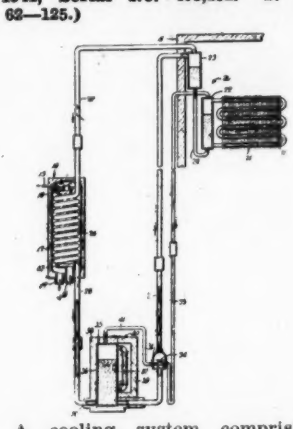
Weeks of Aug. 7 & 14 (Continued)

2,382,084. QUICK FREEZING APPARATUS. George W. Mathews, Chicago, Ill. Application March 20, 1942, Serial No. 435,479. 7 Claims. (Cl. 62—102.)



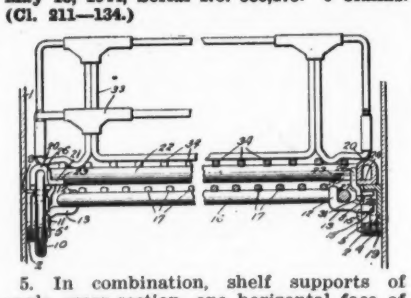
1. An apparatus for freezing comestibles comprising a casing including a pair of opposed walls, structure including partitions which extend from one of said walls to the other, said structure dividing the interior of the casing into a chamber and a passage at each of the opposite sides thereof, solid panels extending from partition to partition and dividing said chamber into a plurality of non-communicating compartments, false bottoms having apertures therein and arranged one above each panel, each of said partitions having a set of openings therein, the openings of one set being arranged to place one of said passages in communication with the spaces above said false bottoms and the other set being arranged to place the spaces below said false bottoms in communication with the other of said passages, closures for said openings, means for operating said closures from the exterior of said casing, to selectively segregate one or more of said compartments from said passages, structure including a blower and a refrigerating unit for circulating air through said passages and said compartments, each of said opposed walls having openings therein arranged to permit comestibles to be put in each of said compartments at one end and withdrawn from the other end, and closures for the last mentioned openings; the combined areas of the openings of all of the false bottoms being so related to the normal output of the blower than sufficient pressure may be built up above the false bottom in each compartment to insure that refrigerated air traversing therethrough will circulate through all portions of the space above the false bottom in such compartment.

2,382,123. REFRIGERATION. Philip P. Anderson, Jr., Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application July 19, 1941, Serial No. 403,152. 17 Claims. (Cl. 62—125.)



1. A cooling system comprising an evaporator, a condenser disposed below said evaporator for effecting vaporization of volatile liquid refrigerant in said evaporator and condensation of the vaporized liquid in said condenser, means for lifting the condensate into said evaporator by application of vapor from said evaporator constituting a first source of lifting vapor, and means arranged to receive condensate flowing from the condenser by gravity and constituting a second source for supplying vapor to the lifting means to lift condensate into said evaporator when the vapor from said first source is diminished.

2,382,160. GLIDING SHELVES FOR DEEP REFRIGERATORS. Herbert Kuckel, New Orleans, La. Application May 18, 1944, Serial No. 536,175. 6 Claims. (Cl. 211—134.)



5. In combination, shelf supports of angle cross-section, one horizontal face of each constituting a shelf support and

(Concluded on next page, Col. 2)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $2.50 per insertion. Limit 50 words.
RATES for all other classifications $5.00 per insertion. Limit 50 words.
Advertisements set in usual classified style. Box addresses count as five words, other addresses by actual word count.
PAYMENT in advance is required for advertising in this column.

POSITIONS AVAILABLE

DRAFTSMAN and engineer for heating, ventilation, and air conditioning. KROESCHELL ENGINEERING CO., 215 W. Ontario St., Chicago.

PATTERN LAYOUT man and sheet metal mechanics. Heating and ventilating engineer. Engineer familiar with metal fabrication work. All the above men are needed on high priority government contracts and for postwar work. KUHR BROTHERS, Savannah, Ga.

AA-1 REFRIGERATION service men; permanent positions with established distributor General Electric commercial refrigeration and air conditioning. Thoroughly trained, proven record. To "above average" service man, highest salary, opportunity advancement, paid vacations, ideal working conditions. Write qualifications, references, salary desired. MARTIN-JOHNSON ENGINEERING COMPANY, 4209 Oak Lawn Avenue, Dallas, Texas.

SAN DIEGO, California. Wright Refrigeration Service requires first class service men at $1.25 per hour with time and half over 40 hours per week. Steady work, lots of overtime, and the best climate in America. WRIGHT REFRIGERATION SERVICE, 1337 India St., San Diego, Calif.

APPLICATION ENGINEER: familiar with technical and practical applications of heat transfer equipment wanted by refrigeration and air conditioning manufacturer located in Michigan. Please advise background and qualifications. Box 1793, Air Conditioning & Refrigeration News.

COMMERCIAL application and service engineers. Large refrigeration firm with growing export business has openings in several territories for qualified refrigeration application and service engineers. Knowledge of foreign languages helpful. Write giving full details experience and references. Box 1797, Air Conditioning & Refrigeration News.

DESIGNING ENGINEER on commercial refrigeration, coolers, display cases and specialty production, capable of designing, engineering, and handling complete factory operation of small plant over 50 years in business. Location, Central U. S. Offering fine opportunity to qualifying party. Give past experience, references, and wages desired. Write Box 1800, Air Conditioning & Refrigeration News.

OHIO MANUFACTURER needs Assistant Sales Manager for nationally sold packaged refrigeration product. Excellent postwar volume assured. Position will require some travelling. No reconversion problem. Give full information first letter. Confidential. Box 1806, Air Conditioning & Refrigeration News.

SERVICE MEN—Chicago—$1.85 per hour plus $.25 per hour car allowance. Steady employment with large, long established refrigeration and air conditioning installation and service organization. Advancement opportunities in expansion program. Consideration given only to thoroughly experienced, competent men. Give full details in your letter. Box 1808, Air Conditioning & Refrigeration News.

MANAGER for our installation and service department, refrigeration, air conditioning, and heating. Headquarters Jacksonville, Fla. State age, salary desired, qualifications, and references first letter. Box 1809, Air Conditioning & Refrigeration News.

POSITIONS WANTED

ENGINEERING DRAFTSMAN. 18 years experience; wood, metal products, 11 years with present firm, charge of production detailing, very good producer. Thorough knowledge of materials, production methods and assembly. Good personality. Consider similar position anywhere including South America. Free to travel. Box 1798, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER, M. E. graduate. Broad experience in commercial refrigeration. Familiar with application engineering, service engineering, and design, development and manufacture of commercial fixtures. Executive experience and ability. Write Box 1812, Air Conditioning & Refrigeration News.

AVAILABLE SEPTEMBER 15, 1945. An experienced refrigeration, air conditioning, and heating service engineer with a successful record of profitable retail service department operation. Prefer connection with an organization where the "know how" of 18 years in this field can be exercised. References available. Box 1810, Air Conditioning & Refrigeration News.

FRANCHISES WANTED

ATTENTION: MANUFACTURERS. Export can be a great part of your business. We offer to sell and promote your goods in world markets on a simple, domestic business basis. At our expense we will introduce and sell your goods. It is to your interest to consider our offer. Write immediately E.S.T., EXPORT DIVISION, 25 Beaver St., New York 4, N. Y.

EQUIPMENT WANTED

USED FRIGIDAIRE 75 and snubber float valves wanted, less shut off valves. ALLIED REFRIGERATION ENGINEERING CO., 1635 East 55th St., Cleveland 3, Ohio.

EQUIPMENT FOR SALE

FOR SALE: "Centraz" Vapor Seal—a waterproof adhesive that adheres to metal, wood, fibreboard, etc. For frozen food and ice cream cabinets, milk and water coolers and all refrigeration applications requiring vapor control. CHRISTY CO., INC., 1530 Olive St., St. Louis 3, Mo.

FOR SALE. Remanufactured air and water-cooled condensing units ¼ hp. up to 1½ hp. Frosted food and ice cream cabinets. EDISON COOLING CORP., 310 East 149th St., New York 51, N. Y.

HOME, FARM freezers. New. Limited supply available. All steel construction, finished in white Duco and stainless steel tops for use in Quick-Freeze and Storage. WILSON INDUSTRIES, 3533 Holland Ave., New York City 67. OL 5-6905.

FROZEN FOOD cabinets. 100 all metal streamlined, 15 cu. ft., fully insulated. Immediate delivery subject to prior sale. 30 years experience. DEW FREEZE CO., 2651 Washington, St. Louis, Mo.

DRY BEVERAGE coolers, 6 ft., 8 ft., 10 ft. Farm freezers, all sizes. Water coolers, reach-ins, compressors. All brand new. No priority. Immediate delivery. Surplus blower coils, new, American #O. C. 168. $135. 15° T.D., 23,000 B.T.U. JORDON REFRIGERATOR CO., 235 No. Broad St., Philadelphia 7, Pa., phone Rittenhouse 6359.

IMMEDIATE DELIVERY Beverage Coolers, 6 and 8 feet, without units. Freezers complete with units or without units. Large supply blower coils. Write, wire, or phone GENERAL REFRIGERATORS CORP., 678 Broadway, New York 12, N. Y. STuyvesant 9-1222.

REFRIGERATORS for immediate delivery. Double duty, new, 4, 5, and 6 foot lengths. Fluorescent lighting. Send for literature and prices. GIRARD STORE FIXTURE CO., 919-21-23 W. Girard Ave., Philadelphia, Pa.

QUALITY dry beverage coolers, 75 inches long, 28 inches deep, 39 inches high, sliding doors. Freezers, stainless steel front, sides and top. Beer pumps, blowers. Stainless steel beer coolers, tavern work benches. Office and cafeteria water coolers. MAJESTIC REFRIGERATOR CORP., 625 Broadway, New York 12, N. Y.

FOR SALE: Miscellaneous group of 37½ galvanized steel coils including gravity coils for coolers and blower cores for panel-type blower coils at a fraction of their original cost. Will sell entire lot or any part thereof. For details write McCRAY REFRIGERATOR CO., Kendallville, Ind.

WANTED!
ICE CUBE TRAYS
ALL TYPES—ANY QUANTITY
Submit samples with quantities available and lowest cash prices.
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PURO FILTER CORP. OF AMERICA
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LARGE REFRIGERATION CO.
Has openings for experienced refrigeration salesmen to work abroad. Knowledge of foreign languages helpful. Excellent money making possibilities. Write giving full details experience and references.
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NIAGARA
"NO-FROST" METHOD WITH SPRAY COOLERS
. . . gives always full capacity because there is no interruption for defrosting at sub-zero temperatures; protects quality in foods.
NIAGARA BLOWER COMPANY
25 Years of Service in Air Engineering
Dept. AC, 6 E. 45th St., New York 17, N. Y.

Refilling
IMPERIAL TORPEDO DEHYDRATORS
Fast, Simple and Easy as A-B-C

A SIMPLY UNSCREW AND REMOVE THE CONNECTION AT OUTLET END OF DEHYDRATOR.
Note that on the Torpedo there are no bolts to remove—no flanges to take off.

B SHAKE OUT OLD SILICA GEL, CLEAN DEHYDRATOR AND SCREEN, HEAT TO REMOVE MOISTURE, AND REFILL WITH NEW SILICA GEL.
No loose screens to contend with on Torpedo. Finger type monel metal screen—of welded construction—is integral with outlet connection so that screen and connection are removed at the same time. Dehydrator can be heated before refilling, if desired, because no soft solder is used in construction.

C SCREW OUTLET END BACK IN PLACE.
No soldering required after refilling on the Imperial Torpedo Dehydrator. The job is done in short order.

YOUR BEST WEAPON IN THE WAR ON MOISTURE

Note These Other Important Torpedo Advantages:

One-piece streamlined shell provides greater strength, easier passage of refrigerant—has fewer joints.
Finger-type outlet screen provides more efficient filtering, less chance of clogging.
Copper and brass construction throughout.
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Having Greater Efficiency
Serpentine Plates for locker plants, sharp freezing cabinet liners, and beverage cooling. Streamline Truck Plates for refrigerated transportation.
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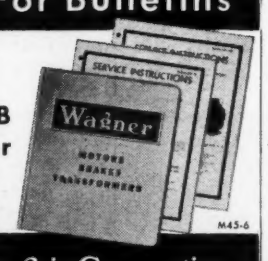

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GENUINE MAYFLOWER
CONDENSING UNITS AND PARTS
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The only publication servicing the industry in Canada
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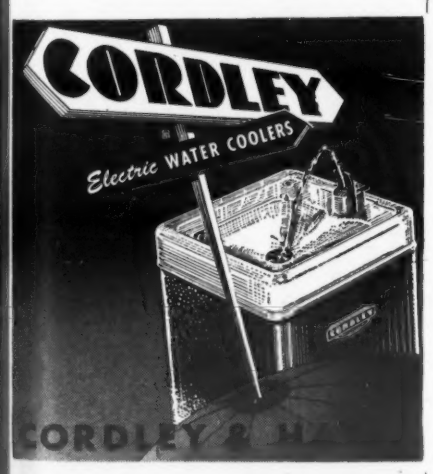
Electric WATER COOLERS

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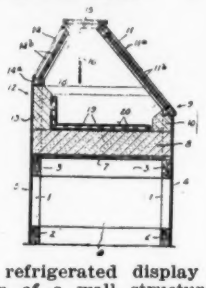
Patents (Con't)

(Concluded from preceding page)

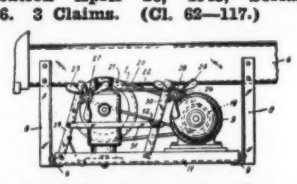
gliding surface, those parts of each support being notched at each end, the vertical part of each support adapted to be secured to spaced wall surfaces, with the rear ends of said parts bent outwardly to constitute stops and with spaced ears depending from the bottom edge, each of said ears having a threaded orifice, rollers rotatably mounted on screws secured in the forward ears, shelf supporting lugs secured on the other ears, a shelf having side members of inverted v-shape cross-section adapted to seat on said rollers, slide parts bridging the side members at the lower rear end of each side member with outwardly directed lugs carried by the rear end of each side member, said lugs shaped and proportioned to pass through the notches at the rear end of the shelf supports and arranged parallel with and spaced below the slide supports of the side shelf members, guide lugs extending downwardly from the first mentioned lugs adapted to engage the inner edge of the supporting part of each shelf support, and a second shelf structure adapted to be supported by the shelf supporting lugs carried by the shelf support ears.

2,382,599. REFRIGERATED DISPLAY CASE. William Wallace Blair, Lakewood, Ohio. Continuation of application Serial No. 455,307, Aug. 19, 1942. This application July 20, 1944, Serial No. 545,827. 12 Claims. (Cl. 62—89.5.)



1. In a refrigerated display case, the combination of a wall structure and refrigerating means defining an enclosed chamber providing a display space suitable for products to be displayed therein and dispensed therefrom, the refrigerating means being chiefly disposed in the lower part of the said chamber and serving to at least partially bound the display space thereof and said wall structure comprising a heat insulating bottom chamber wall, a front chamber wall rising from said bottom wall and having a transparent section, a barrier wall extending substantially from one end of the case to the opposite end thereof and having its bottom boundary above the bottom of the display space, and a rear wall having a section extending upward from the rear part of the bottom wall and having a movable door section controlling an opening which as an entirety is disposed to the rear of said barrier wall and at least as high approximately as the lower boundary of said barrier wall, the refrigerating means, the transparent section of the front chamber wall and the barrier wall being disposed in such relation to each other as to render substantially the entire bottom of the chamber visible through said transparent section.

2,382,667. REFRIGERATING SYSTEM FOR MOTOR VEHICLES. William Ryan, Jr., University City, and Alfred C. Ratermann, St. Louis, Mo.; said Ratermann assignor to said Ryan, Jr. Application April 26, 1943, Serial No. 484,556. 3 Claims. (Cl. 62—117.)

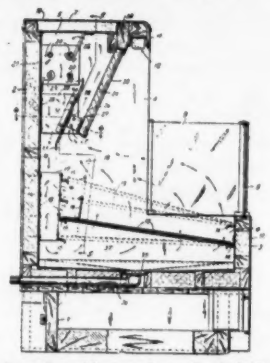


1. In a refrigerating system for a motor driven vehicle having a frame and a propeller shaft longitudinally of the frame, the combination comprising a supporting frame suspended below the vehicle frame, a speed reducer mounted in the supporting frame to one side of the propeller shaft, a compressor mounted in the frame on the opposite side of said shaft, the speed reducer and compressor being mounted and arranged so that a driven shaft of the reducer is coaxial with and connected to a driving shaft of the compressor, said axis being crosswise of the vehicle, and a belt driven by the propeller shaft and driving the speed reducer.

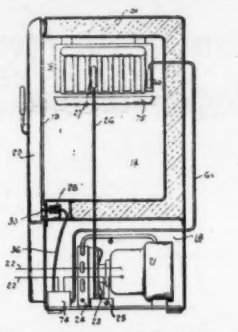
2,382,733. REFRIGERATION APPARATUS. Gerald P. Marcy, Longmeadow, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Feb. 23, 1943, Serial No. 476,832. 8 Claims. (Cl. 62—4.)

1. The combination with a refrigerator including a food compartment having an access opening thereto, a door for closing said opening, a heat-exchange unit for cooling said compartment, and a refrigerating apparatus for maintaining said unit at a below-freezing temperature, of hydraulic means responsive to the opening and closing of said door for rendering said refrigerating apparatus inoperative when said door has been opened and closed a predetermined number of times,

Complete Line of
HERMETIC
Self-Contained OPEN TYPE and REMOTE TYPE
Refrigerating Units
⅛ TO 20 H.P.
UNIVERSAL COOLER
MASON OHIO
BRANTFORD ONTARIO
WE SELL TO MANUFACTURERS ONLY
UNIVERSAL COOLER CORPORATION
Automatic Refrigeration since 1922

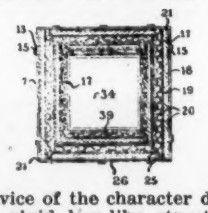


wall, end walls, a low front wall, a hood projecting from the top of said rear wall and overhanging part of the space between said front and rear walls, a refrigerating device in the top of said case adjacent to said rear wall and above the level of the top of said front wall and a rearwardly inclined curtain wall of insulating material secured to the underside of said hood and tightly fitted thereto and to said end walls, said curtain wall projecting below the level of said front wall.



and means for again rendering said refrigerating apparatus operative.

2,382,859. REFRIGERATED SHIPPING CONTAINER FOR USE WITH AIRCRAFT. Leonard P. Clerc, Chicago, Ill. Application Nov. 16, 1942, Serial No. 465,658. 6 Claims. (Cl. 220—9.)



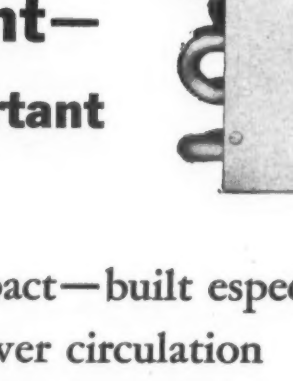
1. In a device of the character described, including a rigid box-like structure having a door opening and a plurality of insulating liner pads positioned along the inside walls thereof, a fabric sheathing, comprising sections of canvas, or the like, cemented to the exterior surfaces of the container and having portions extending around the edges of said door opening and said liner pads, and into the interior of said structure, where they are cemented to the exposed surfaces of said liner pads to reinforce the same and secure them in position.

2,382,937. OPEN REFRIGERATED DISPLAY CASE. John R. Caulk, Jr., Ladue, and Russell E. Davis, St. Louis, Mo., assignors by mesne assignments, to C. V. Hill & Co., Inc., Trenton, N. J., a corporation of New Jersey. Application Nov. 28, 1941, Serial No. 420,797. 13 Claims. (Cl. 62—89.6.)

1. A refrigerated display case of the open type, comprising a base, a high rear

REISSUE

22,664. REFRIGERATION. Hugo M. Ullstrand, Stockholm, Sweden, assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Original No. 2,215,674, dated Sept. 24, 1940, Serial No. 183,257, Jan. 4, 1938. Application for reissue May 8, 1945, Serial No. 592,619. 6 Claims. (Cl. 62—119.5.)



WANTED!!!
Shop foreman and engineer with knowledge of production on reach-in boxes, meat and delicatessen cases, walk-in boxes, etc. Must be experienced and capable of taking charge of complete cabinet factory.
ELSTER'S
115 S. Los Angeles St.
Los Angeles 12, California

Bowen
REFRIGERATION SUPPLIES, INC.
Atlanta Jacksonville
Tampa Charlotte
"The South's Largest Refrigeration Supply Jobber"

HUBBELL YODER REFRIGERATION PLATES
THE HUBBELL EVAPORATOR PLATE
Every square inch of surface is prime heat pick-up.
For Frozen Food Lockers, Freezer Cabinets, Milk Coolers, Fruit and Vegetable Counters, etc.
Write for complete information. It will pay you.
ENGINEERING SERVICE INC.
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Sole Agents for
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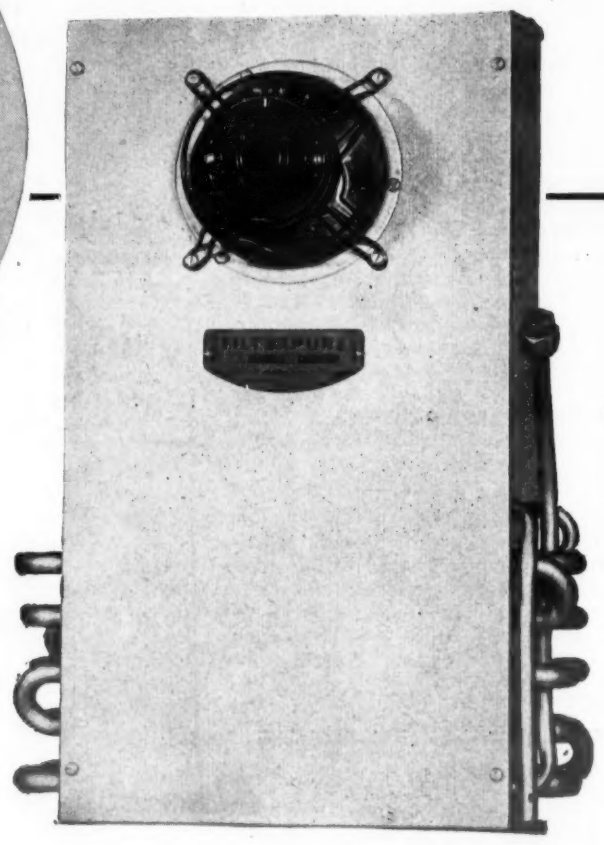
Post-War
FILTERPURE BACK BAR UNITS

They're New and Different—
With These Important Features:
1. Extremely compact—built especially for back bars
2. Centrifugal blower circulation
3. Quickly and easily installed
4. Even temperature throughout entire fixture
5. Two units—for all size back bars
6. Exclusive Betz coil construction
Let us send you complete information about our post-war line of cooling units.
For Information, Call or Write- BETZ CORPORATION
HAMMOND, INDIANA

N. Y. Store Won't Sell Appliances 'Sight Unseen'

NEW YORK CITY — Stern's department store here is not going to have its customers "sign up" for the appliances that will soon be on sale in its fifth floor appliance department.

In large newspaper advertisements, Stern's proclaims that—

"Selling sight unseen is not our business . . . we don't believe in it . . . nor will we do it. As each new appliance comes into the store, we will publicize it in no uncertain terms, so don't ask us to take your order now for something you haven't even seen."

The advertisement was evidently in answer to a newspaper story which said that "homemakers who want to buy new housewares and postwar electrical appliances either will have to sign up or line up to make a purchase in the next two months, according to a survey of houseware departments of stores in Manhattan and Brooklyn.

Rema's Jobber Group Studies 3 Problems

NEW YORK CITY—The Jobbers Relations Committee of the Refrigeration Equipment Manufacturers Association was scheduled to meet Sept. 21 in New York City to consider various projects on which the committee has been working. These include:

Improvements in packaging of parts, particularly compressor parts.

Uniform discounting dates for customers.

The agenda for the proposed joint meeting of R.E.M.A. and N.R.S.J.A. next spring.

Motors In Short Supply; WPB Cuts Inventory

WASHINGTON, D. C.—Continuing short supply of electric motors has prompted WPB to place a 45-day inventory limit on these items, according to recent revisions of the new general inventory control regulation, Priorities Regulation 32.

Affected by the latest change are fractional horsepower a.c. motors and single phase a.c. integral horsepower motors, except universal types, which are now listed in Table 1 of the regulation.

WPB Consumers Bureau To End by Nov. 30.

WASHINGTON, D. C.—By Nov. 30 WPB's Consumers Hard Goods Bureau, including the Consumers Durable Goods Division, will be a thing of the past, according to the bureau's chief, Stanley B. Adams.

Some 55% of the bureau's personnel will be out by Oct. 1, said Mr. Adams.

Pangburn, Veteran G-E Export Official, Dies

NEW YORK CITY—E. C. Pangburn, manager of the refrigeration and air conditioning department of the International General Electric Co., Inc., died suddenly during the night of Sept. 6 at his home in Montclair, N. J.

Having joined the General Electric Co. in 1908 as a member of the foreign department, he later helped pioneer the refrigeration and air conditioning activities of his company in 1928.

In 1937, he became manager of the refrigeration and air conditioning department, which position he held at the time of his death.

Mexican Co. To Produce Westinghouse Lines

MEXICO CITY, Mex.—Formation of a $10 million company which will produce Westinghouse appliances under a licensing arrangement at a plant near here is now underway.

Known as Industria Electrica de Mexico, the new company will be financed by both United States and Mexican interests, the latter being offered 51% of the stock. An agency of the Mexican government will also subscribe for an additional $5 million in bonds.

Westinghouse Electric International Corp., a subsidiary of Westinghouse, will hold less than 10% of the new firm's total capital.

In addition to refrigerators and home radios, the Mexican plant will produce other household appliances, small pumps, motors, and generators. Westinghouse will receive royalties on these products. The new company plans also to assemble some products produced partly in Mexico and partly in the United States. Heavy equipment for the Mexican market will still be manufactured at Westinghouse plants in the United States.

The present Westinghouse sales organization in Mexico, which has been operated for about 10 years, will be taken over by the new concern.

Luis G. Legerreta, director general of the Banco Nacional de Mexico, will be president, and Jose R. Bejarano, formerly with the Associated Companies Department of Westinghouse International, will be general manager.

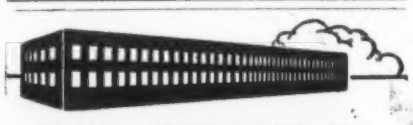
Bell and Olin to Head Servel Regional Sales

EVANSVILLE, Ind.—In connection with an expansion of the Servel, Inc., electric refrigeration program, the appointments of Harry F. Bell as eastern sales manager and Carl L. Olin as western sales manager were announced by W. J. Aulsebrook, sales manager of the electric refrigeration division.

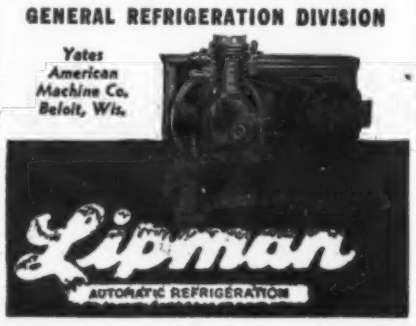
Having been with Servel since 1936, Mr. Bell was formerly with the company's Boston distributor. He will now handle all field contacts for the electric refrigeration division east of the Illinois-Indiana line.

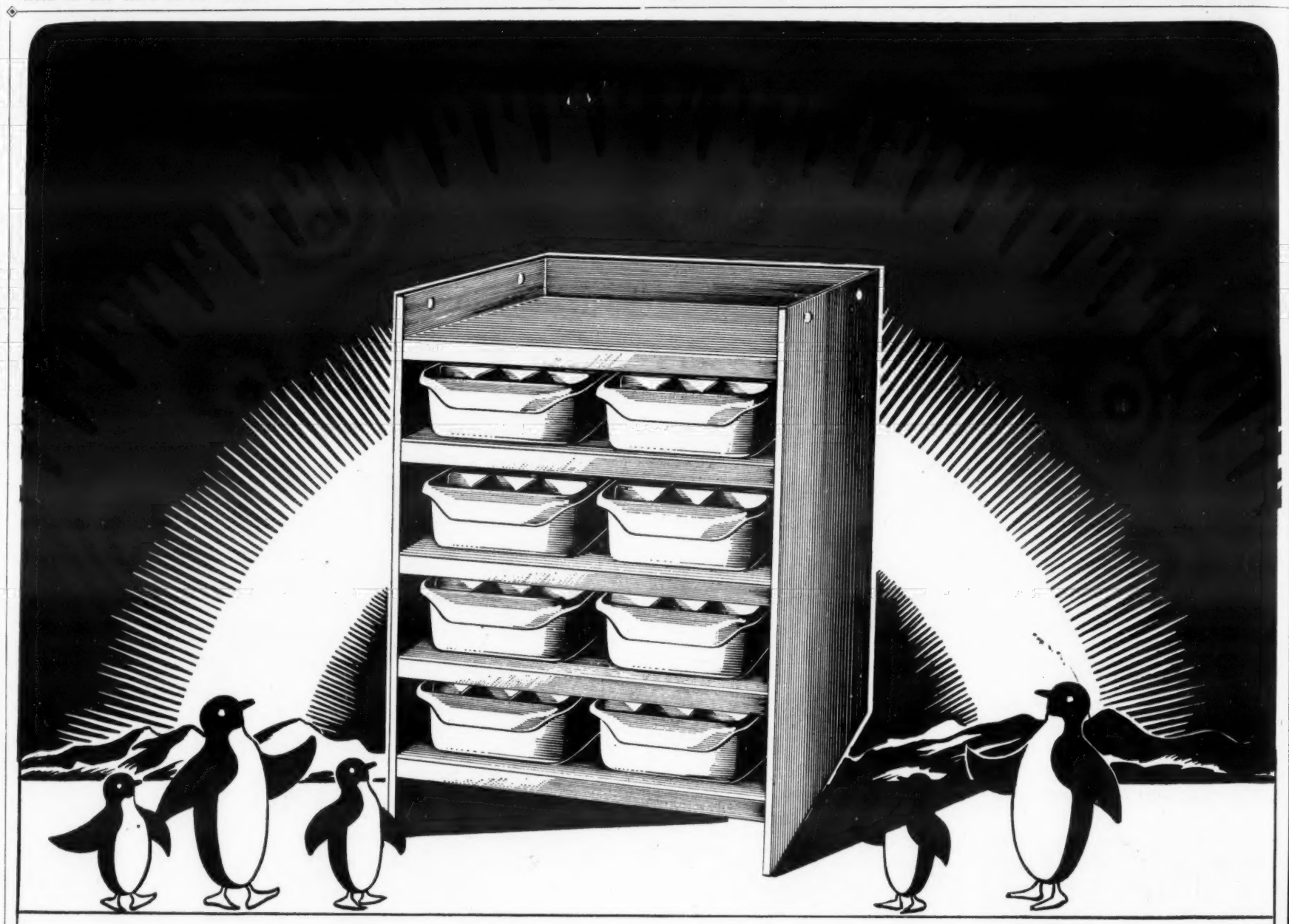
Mr. Olin started with the company on the west coast in 1926.

In the West it's
REFRIGERATION SERVICE INC.
Pacific Coast Supply Jobber since 1928
Your letterhead will bring our latest catalog—also our House Organ.
"The Liquid Line"
RS 3109 Beverly Blvd.
LOS ANGELES 4, CALIF.



WAR INDUSTRIES NEED REFRIGERATION
The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.
GENERAL REFRIGERATION DIVISION
Yates American Machine Co. Beloit, Wis.





Bush ICE MAKING COILS

All Bush Ice-Making Coils are constructed with steel casings and sufficient copper tubing in each shelf to insure rapid freezing of ice. Built to highest specifications, Bush Ice-Making Coils are part of the equipment of every Liberty ship which goes down the ways. Hundreds of these fine units have been installed in Army camps, hospitals, mess halls . . . and they have been used in many other war-essential as well as civilian applications.

Available in two types:—Standard Coil and Finned Coil Models—with tray capacities ranging from single-row three-tray models to double-row 24-tray models, capable of producing from 42 to 576 ice cubes at one freezing. No matter what your requirements, there is a Bush Ice-Making Coil to meet your needs efficiently and economically.

Write for new Bush Catalog which illustrates and describes the Bush Ice-Making coil . . . and other Bush Heat Transfer Products. For advanced engineering . . . Buy Bush.

Heat Transfer Products by BUSH

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